TOWN OF AMHERST

REQUEST FOR PROPOSALS FOR OLD LANDFILL REUSE PROPOSAL

Presented by:



In partnership with:





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Town of Amherst RFP for Old Landfill Reuse Proposal



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LETTER OF TRANSMITTAL

December 20, 2010

Office of the Superintendent Department of Public Works 586 South Pleasant Street Amherst, MA 01002

RE: Letter of Transmittal to Town of Amherst RFP for the Old Landfill Reuse Proposal

Dear Town of Amherst,

BlueWave Capital, LLC ("BlueWave") is pleased to submit this proposal in response to the Town of Amherst's Request for Proposals for the Development of a Solar Energy Project.

We believe this proposal meets all terms and conditions of the RFP. In making this proposal BlueWave is pleased to have the support and financial backing of leading solar energy project finance and construction companies with hard-earned, well-deserved reputations for integrity and excellence in delivering and financing solar energy projects in Massachusetts and across North America and Europe.

BlueWave and its partners propose to install, own, operate, and maintain one solar electric generating facility with a total of at least four point seventy-five (4.75) MW within the Old Landfill across the road from the transfer station at 740 Belchertown Road in Amherst. The BlueWave team proposes to own the solar generating facilities, provide lease payments to the Town of Amherst and sell the net metering credits the facility generates under a Power Purchase Agreement for a term of thirty (30) years. We propose to include in the Power Purchase Agreement an option for the Town to purchase the facility at predetermined intervals.

BlueWave's proposal will create substantial economic and environmental benefits for Amherst and its residents, and help the Town to:

- **Provide the Town with estimated electricity cost savings of over \$25 million** over the life of the contract generated by a dedicated system totaling 3.56MW out of a total 4.75MW of installed capacity on the landfill;
- Provide the Amherst Regional Public Schools or other local entity with an additional estimated electricity cost savings of over \$7 million over the life of the contract generated by a system totaling 1.2MW out of a total of 4.75MW of installed capacity on the landfill;
- Provide the Town with virtually all of its total electricity consumption from a clean, renewable solar photovoltaic system that will not interfere with the Old Landfill's compliance requirements;
- Provide the Town landfill with yearly maintenance mowing and minor settlement adjustments;
- Provide the Town with property tax payments of payments starting at \$350,000 during the first year
 of operations for the photovoltaic system on the Old Landfill with those payments adjusted on a
 yearly basis based on fair market value assessments and will provide over \$5 million in Property
 Taxes over the life of the system;
- Eliminate the risk associated with volatile and unpredictable future energy prices;
- Provide jobs and economic opportunity for Amherst businesses and residents; and



• Reduce Amherst's carbon emissions by over 6,000 tons per year or the equivalent of permanently removing more than 1,200 cars from the road.

The BlueWave team:

- Has collectively sited, permitted, constructed, and financed more than 40 MW of solar
 photovoltaic (PV) systems in Massachusetts and across North America and Europe thus providing
 the Town of Amherst with deeply experienced talent and best-in-class service and performance;
- Includes an investment team that has extensive experience in solar project development including the **financing of over 300 MW of solar PV projects** and the raising of over \$200bn of structured capital for a wide range of asset types.
- Extensive environmental and utility permitting experience in Amherst and throughout the Commonwealth including permitting of solar facilities on landfills;
- Has a long and consistent track record of delivering excellence in energy development and
 environmental services to Massachusetts communities that will provide the Town with accessible,
 responsive, local project management throughout the construction, permitting, and long-term
 operation of the facilities developed through this initiative; and
- Brings a deep knowledge of and extensive experience in shaping Massachusetts and federal solid
 waste and energy law, regulation, policy, and financing vehicles, which will ensure that this project
 receives all available public financing and regulatory support.

BlueWave understands and appreciates the importance of this project to the Town of Amherst and is committed to:

- Working closely with the Town to identify and employ local contractors and workers to build our project with an objective of 25% local hires; and
- Making the Town of Amherst's renewable energy project, not just an energy, financial and economic success, but a valuable educational and job training resource as well.

In signing this letter, the authorized representative for BlueWave and its partner organizations agrees that BlueWave and its partners do not take exception to the Project Specifications outlined in the RFP, are bound by the terms of the Request for Proposals, and that the proposal will remain valid for 12 months from the submittal date.

BlueWave looks forward to working with the Town of Amherst on this exciting and important endeavor.

Thank you for your consideration of our proposal.

Sincerely,

John P. DeVillars Managing Partner

Town of Amherst RFP for Old Landfill Reuse Proposal



BlueWave Capital, LLC 31 Milk Street Boston, Massachusetts 02109

Tel: (617) 470.7297

Email: jdevillars@bluewavestrategies.com



EXECUTIVE SUMMARY

BlueWave Capital LLC, in partnership with Bosch Solar Energy AG, Tighe & Bond, TRC Solutions and Smart Energy Capital, is pleased to present the following proposal for the design, construction, finance, operation, and maintenance of the Town of Amherst's Solar Energy Project.

BlueWave has assembled a first-class team to use a proven methodology and United Statesmanufactured products for developing, owning and operating photovoltaic generating systems.

Our approach allows the Town to expediently and cost-effectively lower its energy costs, insulate itself against volatile and unpredictable future energy costs, enhance its property tax revenues, reduce its carbon footprint, provide educational opportunities for Amherst students and members of the community, and jobs and job training assistance for Amherst workers.

Our proposal will:

- Reduce the Town's electricity supply expense by over 30% when compared to its current costs,
- Provide the Town of Amherst with estimated electricity cost savings of over \$25 million over the life of the contract generated by a dedicated system totaling 3.56MW out of a total 4.75MW of installed capacity on the landfill;
- Provide the Amherst Regional Public Schools or other local entity with estimated electricity cost savings of over \$8 million over the life of the contract generated by a system totaling 1.2MW out of a total of 4.75MW of installed capacity on the landfill;
- Provide the Town of Amherst with over 90% of its total electricity consumption from a clean, renewable solar photovoltaic system that will not interfere with the Old Landfill's compliance requirements;
- Provide the Town with property tax payments of payments starting at ~\$350,000 during the first
 year of operations for the photovoltaic system on the Old Landfill and adjusted annually on a
 schedule to be agreed upon with the Town based on the Fair Market Value estimate for the
 system. This is expected to provide over \$5 million in Property Taxes over the life of the
 system.
- Reduce Amherst's carbon footprint by more than 6,000 tons per year or the equivalent of permanently removing 1,200 cars from the road,
- Help further establish Amherst as a Green Community leader in the Commonwealth,
- Provide Amherst schoolchildren with expanded educational opportunity and Amherst workers with good paying, meaningful jobs.

The members of the team have worked closely together on numerous projects in the past and each member of the team brings its own specialized expertise:

Sound and Experienced Project Financing Capability

 A Power Purchase Agreement, which includes buy-out options for the Town of Amherst, from an experienced, nationally-recognized leader in solar PV project finance.

Experienced Design, Engineering, and Installation

Our team has over 30 years of photovoltaic design, engineering and installation experience,



- o Our team has successfully installed more than 40 MW of solar PV systems,
- Our team has extesive landfill permitting, closure, and post-closure operations and management experience including <u>permitting the only solar generating facility on a Solid</u> Waste landfill in the Commonwealth,
- Our team understands the needs and culture of municipal governments and has specialized expertise in the financing, design, installation and maintenance of solar PV systems for municipal clients.

True Project Management Experience

The team includes Bosch Solar Energy AG as the Design, Engineer, and Construction partner.
 Bosch maintains in-house professional project managers, engineers, and construction teams who have <u>extensive experience in bringing multi-million dollar projects to successful commissioning in North America and worldwide.</u>

Local Expertise

- Our team is committed to employing other local contractors with a goal of having <u>25% of</u> the project workforce comprised of Amherst residents. We are also committed to providing apprenticeship opportunities and job training for Town residents.
- We are eager to work with the Amherst School Department and others to insure that we <u>maximize educational opportunities</u> from this project for Amherst school children.
- Tighe & Bond and TRC, Inc. are Massachusetts based firms with a <u>long history of successfully</u> managing and permitting energy, landfill and remediation projects in Massachusetts.
- BlueWave has <u>advised more than 20 Massachusetts communities on renewable energy policy, regulation, grant funding opportunities, procurement and overall energy strategy and has worked closely with legislators and policymakers to help shape the renewable energy policy and regulatory landscape in the Commonwealth.
 </u>



1. EVALUATION CRITERIA

1.1. Proposal protects the existing landfill caps.

Proposals that do not involve any modification to the existing landfill caps shall be considered highly advantageous. A proposal that requires modification of the cap will be considered advantageous only if the modifications to the caps can be done in a Mass DEP approved method as part of the project. Any other proposed modification shall be deemed unacceptable.

The BlueWave proposal does not involve any modifications to the existing landfill cap. The proposed photovoltaic system to be installed at the Old Landfill in the Town of Amherst will utilize state of the art Schletter PVMax3 ballasted racking systems for the installation of PV modules. The Schletter PVMax3 has been developed to guarantee easy and cost effective installations of large-scale ground mounted systems on sites where ground penetration is undesirable. The system is adaptable to almost any terrain. The dimensioning of the system is based on exact and detailed analysis of each site including soil analysis, consideration of wind and snow loads, as well as pull out and compression tests of the rack fundaments. In addition, Inverter skids will be strategically placed and built upon cement platforms that will also project the existing landfill cap and ensure safe operation of the system during its service life. We have designed and permitted projects on sites quite similar to the Old Landfill.

1.2. Proposal protects operation of landfill gas systems.

A Proposal that fully protects operation of landfill gas systems shall be considered highly advantageous. A proposal that requires modification of the operation of the gas system shall be advantageous only if the modifications can be accomplished in accordance DEP approved methods. Any other proposed modification shall be deemed unacceptable.

The BlueWave proposal will fully protect the operation of the landfill gas system operating on the Old Landfill in the Town of Amherst. The installation and maintenance of the proposed photovoltaic system on the landfill provides for setbacks to the existing gas wells and monitoring systems similar to designs we have employed on other MSW landfills. This will ensure continued and uninterrupted operations of the landfill gas system.

1.3. Experience of team proposing project

If the proposal includes any modification to or operation of a solid waste management activity, a proposal that demonstrates at least ten years experience in solid waste management activities in Massachusetts shall be considered highly advantageous. A proposal that demonstrates at least five years of experience shall be deemed advantageous. More than three years shall be deemed acceptable. Less than three years shall be unacceptable.

The project team has developed and financed more than 40 MW of solar photovoltaic energy projects in North America and Europe. Tighe and Bond and TRC, our environmental permitting partners, have extensive landfill permitting and O+M experience. Tighe & Bond, is a national environmental consulting, and engineering firm with a Massachusetts presence working with firms of all sizes on fossil, renewable, and landfill projects nationwide. They bring extensive knowledge and experience in the reuse of landfills to our efforts.

Our electrical engineering and permitting partner, TRC Solutions, is a Massachusetts based engineering, consulting and construction management firm providing integrated services to the energy, environmental and infrastructure markets nationwide with over 2,400 professionals and 70 offices



throughout the United States. TRC has permitted numerous wind and solar projects across the United States as well as provided design and engineering support. TRC led the permitting effort for the only solar facility on an MSW landfill in the Commonwealth and is presently engaged on a similar project in Kern County, California.

Bosch Solar Energy AG is a wholly owned subsidiary of Bosch AG, one of the world's largest industrial conglomerates. Bosch Solar Energy AG is a vertically integrated manufacturer and EPC firm with a strong financial balance sheet thus reducing project costs and fully mitigating any risk of construction completion and operational efficiency.

Smart Energy Capital develops and finances solar PV projects throughout North America. The Company's management team has extensive experience in solar project development, structured finance and investment management and \$180M in financial backing for solar PV projects from Duke Energy Services and Integrys.

Section 8 of our proposal contains a detailed discussion related to the team staff that will be dedicated to this project as well as their qualifications and areas of expertise.

TRC Solutions, Tighe and Bond and BlueWave each have extensive landfill and brownfields development experience and deep knowledge of the policy and regulatory landscape associated with the operation, maintenance, re-use, and permitting of landfils. TRC recently permitted the only solar generating facility installation on a landfill in Massachusetts and one of the first in the country.

BlueWave has been actively involved in the redevelopment of contaminated properties since 2003 and its Managing Partner oversaw state and federal landfill regulation and permitting during his public service career as Massachusetts Secretary of Environmental Affairs and New England Administrator of the United States Environmental Protection Agency.

Tighe and Bond has a long record of cost-effectively providing landfill engineering, permitting, operation and maintenance services to numerous Massachusetts communities and has worked closely and effectively with the Western Region office of Mass DEP on numerous solid waste management issues.

1.4. Risk to human, health and the environment.

Proposals that pose no risk to human, health and the environment shall be deemed highly advantageous. Proposals that pose minimum risk shall be considered advantageous. All other proposals shall be deemed unacceptable.

BlueWave Capital believes this project will pose absolutely no risk to human, health or the environment. The proposed Amherst Photovoltaic Project is emissions and waste-free and will in no way interfere with neighboring properties and residents. Furthermore, we believe that the project will act as a strong signal by the Town and its community regarding its commitment to environmentally sound and socially responsible fiscal management and economic development. The Amherst Photovoltaic Project will produce clean, renewable energy for at least 30 years for the benefit of the Town and its residents with no adverse environmental impacts.

1.5. Effect on the environment.

Proposals that have a positive effect on the environment, i.e. reduces green house gases shall be deemed highly advantageous.



BlueWave Capital's proposal to convert the Old Landfill into a solar photovoltaic energy facility will have a measurable and important set of positive effects on the environment. The 4.75MW facility BlueWave proposes to build would provide for virtually all of the Town of Amherst's electricity consumption. The facility would avoid the emission of over 6 million tons of CO2 per year and would be equivalent to the permanent removal of over 1,200 automobiles from the road. It will have substantial benefits in reducing Sulfur Dioxide, Nitrogen Oxide, Volatile Organic Compounds and other harmful emissions associated with fosil fuel-generated electricity. Lastly, the environmental benefits would be a strong complement to the economic benefit to the Town of Amherst derived from the discounted purchase of the projects electricity over the life of the contract.

1.6. Project compatibility with neighboring properties.

Proposals that are compatible with neighboring properties shall be considered highly advantageous. Proposals that involve minimum disruption shall be considered acceptable. Proposals that are not compatible shall be considered unacceptable.

BlueWave Capital believes this project will be compatible with neighboring properties and, in fact, provide solar opportunities for them that will further reduce their own electricity costs. We will work with Town officials to meet with and listen to neighborhood residents to help them understand all aspects of the project, participate in the planning for the project, and stay informed of project progress. While the construction and operation of the project is neither loud nor noxious, we will schedule facility construction activity (estimated to be approximately 3 months) at times most convenient to neighborhood residents. BlueWave has extensive experience working with community groups and elected officials on complex development projects and very much values, respects and practices a transparent, community-based, interactive approach to project development.

Furthermore, we believe that the project will act as a strong signal by the Town and its community regarding its commitment to environmentally sound and socially responsible economic development. The Amherst Photovoltaic Project will produce clean, renewable energy for at least 30 years for the benefit of the Town and its residents.

BlueWave has a close affiliation with Alteris Renewables and has been deeply involved in the development of Alteris's Zero Down Solar program whereby owners of residential, commercial and institutional properties can take advantage of no-money-down, low cost financing to install solar energy systems on their properties. The system costs are paid back over time through a low-interest loan. In most cases property owners are able to reduce their overall electricity bill through this program. BlueWave will work with the Town and community leaders to make this program available to neighboring property owners as well as to residents throughout the Town thereby enhancing the benefits to the Town and its property taxpayers.

1.7. Noise levels from use of site

Proposals that do not result in constant noise or sound above 70 db shall be considered highly advantageous. Proposals that result in noise above 70 db for periods of time between 7:30 Am and 4:00 PM Monday thru Friday shall be considered Advantageous. All other proposals shall be considered unacceptable. Emergency situations and construction activities shall be exempt from this condition.

BlueWave Capital believes this project will not generate any type of constant noise. Photovoltaic electric generation systems are inert in nature and would thus not have an impact on noise levels in the vicinity of the Old Landfill. As mentioned above, we will work closely with the community to insure that



construction activities, while not loud, are undertaken during periods most convenient for neighborhood residents.

1.7. Best compensation to Town of Amherst

Proposals that provide the best compensation to the Town of Amherst will be considered Highly Advantageous.

BlueWave proposes to convert the Old Landfill into a solar photovoltaic energy generation facility that will provide for virtually all of the Town's electricity needs as well as provide additional and considerable financial benefits to the Town over the life of the project. Details regarding financial recompense to the Town of Amherst are contained within the "Price Proposal."

2. PROJECT UNDERSTANDING

2.1. Project Background

The BlueWave Capital team has created a concept design for a 4.75MW (DC) project to be located within the Town of Amherst's old municipal landfill site across from the transfer station at 740 Belchertown Road. This system size is important, as we believe it will be large enough to provide the Town with a material portion of its energy needs (90+%), material cost savings over the life of the contract and will avoid some of the hurdles faced by larger projects in the interconnection process given the intermittent nature of solar photovoltaic electricity generation.

We estimate the Old Landfill can support a photovoltaic system of up to 4.75MW while ensuring continued use of the landfill's landfill gas system and preserving, without alteration, the landfill cap and avoiding negative impact on human, health or environment. BlueWave proposes that the Town of Amherst purchase net metering credits generated by the photovoltaic system and is willing to enter into discussions with members of the Amherst community to sell any excess generation from the system to the School Department or other local institutions under similar terms to those offered to the Town.

The proposed facility also falls well within the size limits set for qualification as a Solar Carve–out Renewable Generation Unit, with Solar Carve–out Renewable Generation Attributes, as defined within the draft RPS regulations of the Massachusetts Department of Energy Resources Regulation 225 CMR 14.00.

BlueWave is committed to engaging the WMECO Distributed Generation team to explore ways in which the total capacity of the Amherst Solar Project may be increased further given the space available on the site and the Town's ability to use additional power generated by the system.

The new Solar Carve-Out system ensures that the project will have a long-term revenue stream for Solar Renewable Energy Credits (SRECs). The sale of these SRECs enables BlueWave Capital to offer the Town of Amherst an attractive financial proposal that will allow the Town to purchase electricity at a rate substantially below market rates for the duration of the contract and ensure the financing and long-term viability of the Project. A further discussion of the importance of the Solar Carve Out and SRECs is included later in this document.

2.2. Scope of EPC Work

Bosch Solar Energy will supply a turnkey 4.75MW DC Ground-Mounted Photovoltaic Power Plant by offering Design and Engineering, Construction, Project Management and System Commissioning Services. Bosch will also provide Operation and Maintenance for the lifetime of the system as it has with dozens of projects in North America and Europe.



The system will be comprised of one 4.75 MW facility. The system design will be optimized for local ambient conditions, electrical grid characteristics, topographic features of the landfill and landfill cap load capacity. During the design phase, Bosch Solar Energy will coordinate with the Town of Amherst, WMECO, and ISO-NE to design the Photovoltaic Power Plant so that it meets customer expectations for performance, reliability and safety, minimizes impact to the local grid, and meets all relevant standards including IEEE 1547, UL 1741, and NEC 2008. Tighe and Bond, in partnership with Bosch, will perform a geo-technical analysis to ensure the integrity of both the solar PV system and the landfill for the lifetime of the power purchase agreement. A set of construction drawings will be developed which will include a site layout designating locations of PV system components, electrical 1-line and 3-line drawings detailing all electrical components from the PV modules to the grid-interconnection, module mounting, conduit routing and performance monitoring data flow diagrams. Construction drawings for the proposed system will be stamped by a professional engineer licensed in the state of Massachusetts.

BlueWave and Bosch will manage the permitting, construction and utility interconnection of the PV system by coordinating with the Town of Amherst's Building Department, WMECO, ISO-NE, Tighe and Bond and TRC Solutions. Bosch will specify and source all major components required in the construction of the PV power plant to ensure that these components meet all relevant standards for PV systems including the NEC, UL and IEEE. The Project Management Team will source proven, local subcontactors to install the mounting structure, electrical system and data monitoring devices while working alongside Amherst and WMECO officials to make sure the system is safe to commission.

Once the system has been constructed Bosch Solar Energy will perform a System Commissioning Checklist to ensure proper system installation and functionality. Once the checklist has been completed, the system will be Commissioned and an Operation and Maintenance (O & M) Manual will be issued. The manual details system specifics and operating conditions, component maintenance schedules and procedures. The manual also contains an Appendix, which includes components specification sheets, construction drawings, permits and commissioning documents. Training sessions will be conducted by Bosch Solar Energy, as part of the system commissioning, to instruct Amherst Department of Public Works staff and other officials as appropriate on the PV Power Plant and its safety features.

Bosch Solar Energy will provide O & M on the system for the duration of the contract. On a bi-annual basis, electrical connections and mounting connections will be torqued to the manufacturers specifications and analyzed for weathering, debris will be removed from on or around the PV modules, the system performance will be tested, concrete pads and footings will be examined for cracks or displacement and inverter air filters will be changed. Throughout the life of the system any alerts from the Data Acquisition System will be responded to immediately to minimize system down time.

As part of on-going maintenance of the system and the maintenance of the landfill consistent with all DEP requirements we are prepared to provide services or funding to off-set costs the Town may incur for mowing, landfill monitoring or other landfill maintenance obligations should the Town DPW or other officials so desire.

2.3. EPC Assumptions

In order to complete this proposal, we have consulted extensively with Tighe and Bond, TRC and WMECO in order to develop confidence in several assumptions we are making regarding the Amherst Landfill site, as this information is crucial in determining system costs and scope of work. The assumptions we have made and in which we have confidence are:

The Amherst Landfill Site will be suitable to install a ground-mounted ballasted system. The geotechnical study will be favorable towards the site's ability to bear the static load of the mounting



structure, the PV modules, the inverter, transformer and switchgear, in the location designated for them from the site layout.

The landfill site will require little or no site preparation to begin construction of the power plant facility and PV modules can be oriented due south in order to maximize PV energy production.

Electrical interconnection can be made to WMECO's electric power system (EPS) without significant impact to the grid capacity and without significant costs associated with any required upgrades to the EPS.

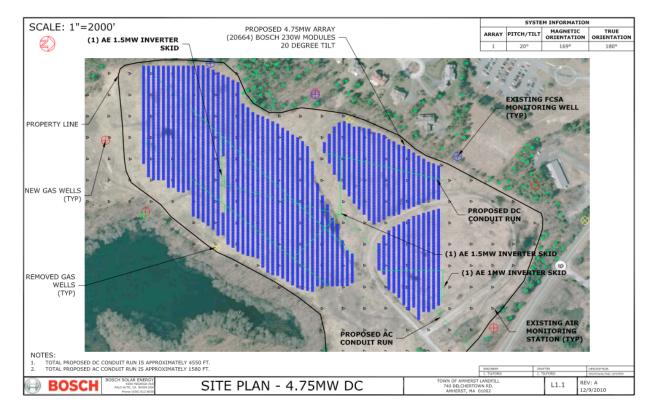
2.4. Site Layout

Figure 1 below shows the Town of Amherst's Old Landfill with Area Detail. Figure 2 below shows a concept Site Plan for the Town of Amherst's Solar Energy Array, including the approximate locations of modules and inverters on the site. The BlueWave proposal contemplates the use of areas 5 & 7 of the Old Landfill while leaving Areas 6 & 8 unused. An 8.5x11" scale version of the Site Plan is included in Appendix A. The site layout was created assuming 20,664 Bosch c-Si M 60 230W crystalline PV modules. The modules are connected in strings to a three separate inverter stations, two of them 1.5MW AC and one of them 1MW AC. The inverter stations contain Advanced Energy "Soloron 500" 500kW inverters and a 1000kVA 480Y/138000D transformers. Detailed product specifications for the PV modules, inverter and ground mount system are included in Appendix B. The arrays are tilted at an angle of 20 degrees to optimize the yearly output and minimize wind loading on the structures. The arrays are arranged in rows with approximately 10' between rows. Final layout will be determined through the post - closure permit process with MADEP. Details on the MADEP process and the modules, inverters, and arrays are provided in the Appendices of this Proposal.

Figure 1: Town of Amherst Old Landfill Map with Area Detail

Town of Amherst RFP for Old Landfill Reuse Proposal

Figure 1: Town of Amherst Project Layout



2.5. Permitting Plan

BlueWave Capital, TRC Solutions, and Tighe and Bond comprise our permitting team. This is the only group to have ever permitted a solar generating facility on a MSW landfill in Massachusetts and will streamline the Massachusetts Department of Environmental Protection landfill closure permitting process by conforming to the existing advice and guidelines provided by the DEP for development of solar on landfill sites (see Appendix D). We will apply for and obtain a 'Major Post - Closure Use' permit (BWP SW 36) (see Appendix C). The Major Post - Closure Use permit is required for post - closure activities at a closed/capped landfill that involves construction or installation of structures, equipment or other appurtenances on or into the landfill's capping system (e.g. construction of a footing or foundation for a solar panel).

This project will likely qualify for Fast - Track Permitting by MADEP, though the project schedule has assumed the standard process. Information on MADEP's Fast Track Permitting is included in Appendix D. Projects qualify for Fast - Track Permitting if they are novel or complex, of significant environmental interest to the Commonwealth, or meet MADEP's sustainable development principles. While there is nothing novel or complex about a PV system, and MADEP has been active in promoting PV on landfills as evidenced through its conference presentations and fact sheets included in Appendix E, increased use of renewable energy is of environmental interest to the Commonwealth, and the project meets the MADEP sustainable development principles.

BlueWave expects to use Areas 5 & 7 of the Old Landfill for the development of this project. Areas 6 & 8 will be excluded and can continue to be used in a manner similar to their use prior to the installation of the proposed solar photovoltaic energy project. BlueWave will coordinate with the Town of Amherst



and MA DEP to ensure that our project does not interfere and can actually help facilitate the process of grading of Area 5 to correct settlement on the site under a Major Mod permit from the MA DEP.

Materials and studies that we will provide as part of this permitting process are as follows:

- Solid Waste Site Assignment Document the landfill's solid waste site assignment, particularly any specific requirements or limitations that would constrain, preclude or prevent the implementation of a post closure use at the closed landfill.
- Landfill Property Deed: Identify any limitations established for the property that may constrain or preclude the proposed activity.
- Environmental Site Assessment Provide a summary of the findings of the site assessment performed in accordance with 310 CMR 19.150, and evaluate the relevance of that information to the proposed post closure use activity. Identify any additional assessment work that may be needed to evaluate the impacts of the proposed post closure activity.
- Closure Permit and Closure Certification Include copies of the closure permit and closure certification approval issued by MassDEP for the landfill.
- Site Plan Plan showing the landfill limits, site assignment limits, and all features/appurtenances on the site including abutting properties within a 500 - foot radius of the landfill.
- Landfill Capping Design Plan Plan showing all features of the landfill's existing capping system and any proposed changes to that design.
- Post Closure Use Design Plan Plans and reports describing the activities required to prepare, construct, install and operate the post closure use development and associated activities.
- Storm Water Drainage/Run Off Control Plan Plan showing all storm water control systems/features and any alterations that will be needed for the post closure activity.
- Storm Water Erosion Control Plan Plan showing all erosion control features associated with the construction and operation of the post closure use.
- Landfill Gas Control/Monitoring Plan Description and plan showing all existing gas control equipment as well as any modifications to the gas control system that would be required to accommodate the post closure use.
- Geotechnical Settlement and Stability Analysis Description of the existing waste mass (i.e. type, depth, etc) and the potential for differential settlement, potential effects on the post closure use and an analysis of the stability of all structures and reinforcement necessary to build on the landfill cap and side slopes.
- Capping System Interface Description and plan illustrating the relationship between the existing capping and the proposed construction, installation, and operation of the post closure use. Describe how the post closure use will overlay the capping system, and whether (and if so, how) it would require penetrating the capping system.
- *Utilities* Description and plan detailing all existing utilities and any new utilities that will be required for the post closure activity, such as utility lines that will support connections to the electric transmission "grid" or other electricity users



- Environmental Monitoring Description and plan illustrating the landfill's existing environmental monitoring systems, focusing on landfill gas monitoring systems and measures that will safeguard against landfill gas build up and an explosion/fire risk associated with the post closure use.
- Qualitative Health & Environmental Risk Assessment Demonstration that the proposed post closure use activities (construction, maintenance activities) will not pose a health or safety risk to either the public or operators of the post closure use. Ambient air monitoring and near surface methane monitoring may be necessary to evaluate landfill gas emissions and the integrity of the cap.
- Post Closure Monitoring & Maintenance Plan A description of all associated activities regarding the monitoring and maintenance of the landfill/site inclusive of the post closure use activity as it relates to maintaining the integrity of the landfill capping system.
- Financial Assurance Description of the mechanism that will be used to provide assurance that the care and maintenance of the landfill capping system is properly performed throughout the 30 year post closure period (this must include the operational and maintenance needs of the post closure use activity), in accordance with 310 CMR 19.051.
- Wetlands Protection Plan (310 CMR 10.00) Documentation of a determination of the applicability of the Massachusetts Wetlands Protection Act. This project will not impact wetlands
- MEPA Description and documentation that the proposed post closure use activity is in compliance with the provisions of 301 CMR 11.00. Due to the size of this project, MEPA is not a required process.

Following submission of all required materials, we expect the permitting process to take roughly 100 calendar days for both Administrative and Technical review by MADEP. Concurrent with this process, we will proceed with zoning review with the Town of Amherst. Building permits and other construction permits will be initiated following MADEP approval and should be obtained within 2-3 weeks.

2.6. Photovoltaic System Permitting

BlueWave, TRC and Tighe and Bond will apply for and procure all necessary local, regional, and state permits. We will ensure that all such permits are approved and available before the start of installation. As part of the preparation for project construction, we will provide the following information as necessary for inclusion in required permit applications:

- 1. Elevation plans showing front, side, and rear views of the proposed structures to be built
- 2. Site Plan, including photovoltaic array layout stamped by a Professional Engineer and showing the site boundaries, plan view of proposed system, and any other relevant site details
- Electrical Diagram detailing the photovoltaic system wiring, associated components, over current devices, and electrical interconnection detail. Electrical design will be compliant with the National Electrical Code and will be stamped by a Professional Engineer.
- 4. Documentation of the major system components to be used, including modules, mounting system, and inverter
- 5. BlueWave name, address, and contact information



- 6. Name, address, phone number, and signature of the project owner, as well as all co-owners or property owners
- 7. Name, contact information, and signature of any agents representing the project owner
- 8. Documentation of actual or prospective control of the project site, sufficient to allow for construction and operation of the proposed solar photovoltaic installation
- 9. Plan for the operation and maintenance of the large-scale ground-mounted photovoltaic installation, which shall include measures for maintaining safe access to the installation, as well as general procedures for operation and maintenance of the installation
- 10. Proof of liability insurance
- 11. Emergency response plan, if required, detailing means of shutting down the photovoltaic system
- 12. We will also ask Amherst to identify a responsible contact person for public inquiries throughout the life of the project

Since the proposed project is for the construction and operation of a new renewable energy facility, an application for qualification under the renewable energy portfolio standards is required to receive SRECs. The facility will qualify as a Small Power Production facility and receive RECs based on the amount of energy generated. A qualifying renewable generation unit is credited with one SREC for every 1,000 kWh, or one megawatt-hour (MWh), of electricity it produces. BlueWave will follow the Executive Office of Energy and Environmental Affairs' online application process for RPS Class I applicants to submit a completed Statement of Qualification Application form.

Statement of Qualification Pursuant to Massachusetts RPS

The Massachusetts Department of Energy Resources (DOER) must grant a Statement of Qualification for a solar energy project to qualify as a New Renewable Generation Unit under the Renewable Energy Portfolio Standards. Qualification enables a solar PV system operator to sell SRECs to facilities needing additional credits in their portfolio, or otherwise on the open market.

2.7. Project Construction Schedule

Table 1 below shows a project milestone schedule for the Town of Amherst's Solar Energy Project. This is a conservative project schedule with contingency built - in to ensure delivery according to the schedule set forth in this Proposal. A full Gantt chart schedule outlining all the pertinent tasks for this project is included in Appendix F. As noted above, it assumes the standard permitting process through MADEP, and as discussed below it assumes the standard interconnection process with WMECO. BlueWave believes this project will likely qualify for MADEP Fast - Track Permitting and an Expedited Process with WMECO. (Probably should add one month to the permitting schedule to conform with the text.)

Table 1: Construction Schedule

Project Milestone	Completion Date
RFP Response Submittal	12/23/2010
Contract Signed	2/03/2011
PPA Executed	3/01/2011
Interconnection Application Filed	3/03/2011
Post-Closure Permit Application Filed	3/05/2011
Module Supply Secured	7/14/2011



Local Permits Awarded	6/03/2011
Post-Closure Permits Awarded	6/03/2011
Interconnection Agreement Signed	6/10/2011
Financial Closing	6/15/2011
Construction Completed	9/08/2011
Project Commissioning	9/20/2011

2.8. Equipment Procurement & Construction Management Plan

2.8.1. Equipment Procurement Plan

BlueWave proposes installing Bosch Solar Energy AG photovoltaic modules, Advanced Energy inverters, Schletter ground mounting systems, and DECK Monitoring systems for the Town of Amherst's Solar Energy Project. Data sheets with equipment specifications including size are included in Appendix B. To ensure this equipment arrives on time and undamaged, Bosch Solar utilizes the following process:

- 1. *Develop Purchase Order:* Purchasing reviews final design plans and develops a purchase order based on the requested equipment.
- 2. *Purchase Order Verification:* The purchase order is sent to the Project Manager in charge of construction for sign-off and verification of equipment.
- 3. Equipment Delivery
- 4. Review Packing Slips: Upon delivery of equipment Bosch will review the packing slip and count equipment to ensure the quantities on the packing slip match what has been delivered.
- 5. Consult with Manufacturer: If the quantities delivered do not match the packing slip, Bosch Solar will call the manufacturer prior to signing off on the packing slip, to verify what was shipped based on their records.
- 6. Consult with Shipping Company: If the manufacturer verifies that the quantities shipped do not match the quantity delivered, Bosch will refuse to accept the shipment and file a claim with the shipping company.
- 7. Inspection for physical damage: If the quantities delivered do match the packing slip, Bosch inspects all boxes to ensure there is no physical damage. If exterior physical damage is present, a team member opens the package and ensure there has been no damage to the equipment contained within. If necessary, Bosch will test the equipment at this point to ensure it is in working order.
- 8. Sign off on Packing Slip: Bosch will sign packing slip, formally accepting delivery of equipment.
- 9. Fill out on-site Material and Equipment Verification List: The employee who accepts delivery fills out an equipment verification sheet and ensures the QA/QC supervisor has signed off on delivery.

2.8.2. Construction Management Plan



BlueWave's EPC subcontractor, Bosch Solar Energy AG acts as the primary point of contact and accountability, providing ongoing communication and coordination of the project. Bosch Solar Energy's responsibilities include:

- Construct an overall plan for the installation, addressing labor and equipment requirements, safety, and scheduling
- Confirm that the system maintains roof and structural integrity
- Determine all loading impact of the array, wind, snow, etc. prior to the installation
- Confirm that the system will have no adverse impact on any of the existing building electrical systems
- Confer with Electrical Engineering team to configure any remaining required electrical design details; obtain Electrical Professional Engineer stamp on final plans
- Review the tariff requirements for interconnecting the photovoltaic system with the power grid; confer with WMECO interconnect personnel to determine whether feasibility, impact, and/or facility studies will be needed
- Identify insurance requirements and ensure Bosch Solar compliance
- Confer with Amherst to determine how and where materials will be unloaded and stored on site
- Report installation progress to Amherst and make changes to installation schedule if necessary to accommodate facility activity
- Oversee witness testing when final electrical approval is obtained
- Conduct system training for facility staff
- Commission the system by demonstrating start-up and shutdown sequences, safety requirements, and emergency procedures
- Obtain approval from Amherst that the sites have been cleaned to their satisfaction
- Obtain Amherst's sign-off, with a list of any items to be rectified or completed



2.9. System Installation Schedule



2.9.1. Project Management

The project team takes great pride in their work, which is evidenced by the superior craftsmanship of every Bosch Solar Energy installation. Team employees are among the most skilled and talented professionals in the industry. From inception to completion, Bosch Solar Energy's projects are handled by highly trained designers, engineers, analysts, project managers, and technicians to ensure the highest quality.

Each member of the Bosch project team knows their role and what they are responsible for. The Regional Director acts as the primary point of contact and accountability, providing ongoing communication and coordination of the project. The Operations Manager coordinates and submits all paperwork associated with the project. The Project Manager coordinates labor and material logistics. The Senior Technician is the liaison between the Project Manager and the installation crew.

2.9.2. Scheduling

The BlueWave team recognizes the necessity of successfully implementing projects that meet our customer's desired timeline. We also understand the importance of minimal disruption to the daily operations of a facility. The team will work directly with Amherst officials and site managers to create a detailed schedule starting from the date the contract is signed through installation and commissioning, including milestones such as expected permit procurement and equipment delivery, and adhere to that schedule. Any testing that requires a shut-down of the electrical system of the facility will be



coordinated well in advance with the appropriate facilities manager in order to minimize interruption of facility operations.

2.9.3. Security

BlueWave and Bosch understand the unique security requirements associated with working on public facilities. Our installation teams have received and complied with security clearance procedures for military bases, airports, and schools. Bosch will seek out and comply with town and site-specific security requirements as defined by Amherst officials and site managers. All Bosch applicants undergo background checks before becoming employees.

Bosch will also be responsible for maintaining the security of the system equipment. In consultation with Amherst officials Bosch will determine the best means of securing the solar modules, inverters, and balance-of-system components to prevent theft or vandalism.

Base security plan features the installation of 6' fencing around the array. If additional security is required, Bosch is able to incorporate, at additional cost, security systems such as fence-cut wires, string-level monitoring which can detect module theft, lighting and video cameras.

2.9.4. Safety

BlueWave and Bosch recognize safety as an issue of premier importance. Therefore, Bosch employees undergo rigorous safety training to ensure constant awareness of potential hazards and necessary precautions. It is Bosch company policy that all installers – as well as subcontractors – complete the Occupational Safety and Health Administration (OSHA) 10-hour course prior to working on a job site. Bosch employs a full-time Director of Safety and Training who regularly conducts OSHA trainings for a variety of skills required to install solar energy systems. Subcontractors are required to follow the same strict safety requirements as Bosch employees. The Safety Director and on-site Project Manager are responsible for ensuring all Bosch employees and subcontractors have had the necessary training and carry their OSHA cards on the job site as required.

The Project Manager and Senior Technician will be responsible for ensuring all safety procedures are followed accordingly. In order to ensure that these standard safety practices are carried out, the Safety Director and members of his team conduct random and unannounced safety audits of installation sites. The auditor checks for several items, including:

- Crew informed of unsafe areas/conditions
- Crew informed of first aid/eyewash stations
- Work area has adequate lighting
- Tools in proper condition
- Proper warning signs and labels posted
- At least one person trained in CPR/First Aid

If any of these items are found to be substandard, demerits are given to the offender, and corrective actions are taken.

Bosch will work with the facility representative and other decision makers to develop a site-specific Safety Awareness Plan geared towards keeping building residents and Bosch employees safe. The Safety Plan will address standard safety issues, as well as site-specific concerns presented by the site decision makers.



2.10. Commissioning

Our team conducts a detailed testing and commissioning for every system it installs. The team conducts the commissioning with a client representative present. The commissioning process has been honed and perfected to include notation of all system component information, detailed electrical checkout, thorough array performance assessment, and a final walkthrough. This method ensures the quality and reliability of the systems, and an informed client.

Commissioning begins with the notation of all system-related information, including:

- Source circuit fused combiner boxes
- DC disconnect switch(es) and AC disconnect switch(es) (including fuse types and rating)
- kWh meter
- Inverter information (manufacturer and model, including serial number) including checking correct polarity at connections and proper DCEGEC connections to Grounding Electrode
- All data acquisition system information (including confirmation of Network connection, functions, serial numbers)

Upon completely noting this information and performing these basic system checks, the technician conducts a thorough electrical checkout. This electrical checkout includes:

- Meg Ohm readings of each line to various disconnects at each component
- Verification of proper AC voltage at the AC disconnect from Line to Line, Line to Neutral, and correct Phase Rotation
- Test of DC source circuits between the combiner and each string
- Notation of open circuit voltages (VOC dc) at the combiner (looking for opens and reverse polarity)
- Notation of the Max Power Point Current (IMP dc) at the fused combiner (looking for balanced output)
- Assessment of the DC and AC circuits at the Max Power Point at available combiners, Line Amps
- Using Inverter output reading, DAS power reading, Handheld measurements, we verify feedings between inverters, the DAS and using Handheld instruments to perform a three-way confirmation of electrical readings
- The technician will test the inverter to ensure that it performs accordance with UL 1741 antiislanding test
- Throughout this checkout, the Commissioning Technician also inspects the system installation to
 ensure workmanship was accomplished in accordance with current National Electric Code (NEC),
 and local building codes. This inspection includes photos and documentation of the entire
 systems and components

After the detailed electrical checkout, array performance is assessed for each inverter in the system. Information noted and/or calculated includes:

- Module manufacturer and quantity
- Number per string
- Number of strings
- Orientation
- Tilt angle
- Power at STC
- Peak DC power rating



- Module irradiance at STC
- Irradiance measurements to determine performance calculations
- Module temperature at STC
- Module cell temperature at time of test
- Module temperature of coefficient power as published by manufacturer
- Module cell temperature factor
- System de-rate factor confirmation of PVWatts (confirmed calculation on site: mismatch, inverter efficiency, soiling, wiring losses, etc.)
- Predicted system performance
- Actual AC output measured on site versus system performance predicted by PVWatts and Manufacturers' specifications to validate actual performance is within 10% of predicted

Once commissioning is completed, the paperwork is submitted to the utility company. After receipt of permission to interconnect by the utility company is received, the technician will be dispatched to energize the system and perform a final walkthrough with the customer. This assessment addresses the following:

- Disconnects are left in the "on" position
- Lockout tags are removed
- kWh meters are working
- Monitoring system is receiving data
- LCD displays are operational

A technician notes any problems that need to be addressed, provides any applicable recommendations for improvement in the installation, and notes comments from the client. After the system has been energized, Bosch will schedule a training class for customer employees and cover operation and details of their system. At that time manuals for all of the parts and components will be provided to the customer. Subsequent to the final commissioning walk through, Bosch dispatches an independent technician or engineer to conduct a Quality Assurance Inspection.

2.11. Naming Rights

While BlueWave Capital has entitled the project Amherst Solar Project for purposes of this proposal, the Town of Amherst will retain naming rights to the project. Should the Town desire a different name with regional, historic, or community interest, BlueWave Capital supports that effort and will market the project accordingly. As the Amherst Solar Project is an innovative application of land use and also an innovative use of solar energy, we anticipate that the project will receive widespread media attention locally and nationally.

2.12. Decommissioning

BlueWave intends that this project will remain at the site for at least 30 years and potentially for a longer period of time. PV modules in Japan have been documented to be operating reliably 50 years after installation. However, as with any commercial venture, a decommissioning plan is required.

At the conclusion of the Power Purchase Agreement, if the Town has not exercised its buyout options, and if the Town wishes that the solar energy facility be removed as opposed to extending the Power Purchase Agreement, then we will schedule a decommissioning and remove the system within 150 days of the date of discontinued operations. The decommissioning shall consist of:



- A) Physical removal of all solar structures, equipment, security barriers and transmission lines from the site
- B) Stabilization or re-vegetation of the site as necessary to minimize erosion
- C) The restoration of the solar facility site to the state it was in before the facility was constructed

Based on decommissioning of past projects, it is reasonable to assume that PV modules and inverters can be sold for re-use at a profit and that wire (copper) and mounting hardware (aluminum and steel) can be recycled for profit as well. Typical salvage value assigned to PV system equipment at the end of its useful life is 10-20% of initial installed value, which more than adequately covers the cost of decommissioning. For these reasons, and the likelihood that the solar PV generating facility will have many more years of useful life at the end of the contract period, we do not believe that the added cost of financial assurance, which would be reflected in a higher electricity cost to the Town, is necessary. If the system has not been removed within 150 days following the date of discontinued operations, then the Town shall have authority to physically remove the facility and dispose of it at its own discretion.

Decommissioning and site restoration will include dismantling and removal of all panels and supporting equipment, transformers, overhead and underground cables, foundations, buildings and ancillary equipment down to the depth of the landfill cap, and removal of surface road material and restoration of the roads and module sites to substantially the same physical condition that existed immediately before construction of the commercial solar facility. To the extent possible, the site will be restored and reclaimed to the topography and topsoil quality that existed just prior to the beginning of the construction of the commercial solar energy facility. Disturbed earth will be graded and reseeded, unless the Town requests that the access roads or other land surface areas be retained.

BlueWave welcomes discussion on the fate of the project after the 30-year lease and PPA term. In most cases projects are decommissioned as mentioned above. However, should the Town of Amherst be interested in owning the project at the end of the term, our financial partner is open to selling the project to the Town at a substantially discounted market rate.



3. TECHNICAL DETAILS

3.1. Interconnection

BlueWave will be responsible for working with WMECO to apply for and receive interconnection approval for each photovoltaic system we construct. Our team members have attended utility interconnect training sessions and seminars to remain current with state and utility rules. Please see Appendix G for a copy of the WMECO Interconnection Application.

Interconnection tariffs vary by state and by individual utility; Bosch has a team of specialists for Massachusetts that will work with WMECO and the Commonwealth's energy regulators to successfully interconnect the photovoltaic system we design and install. Bosch Operations teams have attended utility interconnect training sessions and seminars to remain current regarding Massachusetts energy and utility rules.

The following are the milestones of the Interconnection Process:

- Electrical Design Team engineers will create an Electrical Diagram (usually a 1-line diagram)
 that sets forth all the major system components and how they are to be wired together to form
 the PV system. The Electrical Diagram also shows how the system will interconnect with the
 power grid.
- Interconnect Application The Operations Manager in the appropriate state office will generate
 the Interconnect Application. The "Interconnecting Customer" will have to sign the application,
 and the Operations Manager will submit the package, with payment for the interconnect fee
 (based on PV system DC wattage).
- Interconnect Review The Operations Manager will follow the application as it is received and reviewed by the utility's Distributed Generation (DG) team. The Operations Manager will answer the utility's questions, bringing in the Engineering team as needed for complex or unusual interconnection situations. With many years of interconnection experience, our Operations Managers have developed excellent working relationships with the utility DG teams, allowing for timely interconnection approval and quick resolution of any technical issues.
- **Approval to Construct** Once WMECO has completed its review and has found the interconnect design to be acceptable they will issue an "Approval to Construct" letter. With this approval in place, the photovoltaic system is installed and interconnected to the local utility.
- System Test Once the overall photovoltaic system has been inspected and approved by the local inspectors ("Authority Having Jurisdiction AHJ"), The team tests the solar energy system and its Data Acquisition System (DAS) to verify proper operation and performance. This testing follows a specific internal quality assurance procedure, overseen by the Bosch Quality Control team.
- Certificate of Completion/Utility Witness Test Following local electrical approval, the Operations Manager will send WMECO a Certificate of Completion and request a utility inspection and witness test. A utility inspector will come to the site and verify that the system has been installed per the Electrical Diagram and that the utility's PV Disconnect Switch is properly installed. Then the inspector will witness a system "anti-islanding" test, where the inverters are isolated from the power grid, simulating a power outage. The inspector will verify that all inverters deactivate and reactivate in accordance with UL 1741 and IEEE 1547 standards. When the inspector is satisfied that the photovoltaic system has met all WMECO safety

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requirements, he/she will advise the Bosch Project Manager informally that the system may be run continuously, interconnected to the power grid. Bosch will then receive the utility's Final Approval letter, which is the formal documentation that the PV system has passed utility inspection.

Bosch will apply to WMECO to interconnect the project under either the Expedited or the Standard Interconnection Process:

Expedited Process

The expected timeline for the Expedited Process is as follows:

- Bosch submits a completed interconnection application to WMECO.
- Within 25 days of receipt of the completed application, WMECO will review the application and notify Bosch of any studies that must be done before construction. If no studies are required, WMECO will grant Bosch approval to construct the system.
- The entire process takes a maximum of 40 days unless a study is required.
- If WMECO determines that a study must be conducted, WMECO has 20 days to complete its study.
- The maximum allotted time between the filing of an interconnection application and receipt of approval to construct is 60 days.

Standard Interconnection Process

While, based on preliminary discussions with WMECO officials, BlueWave anticipates being able to take advantage of the Expedited Process, if WMECO determines that the project meets any of the following circumstances, the project requires the use of the Standard Interconnection Process:

- The project contributes excessive fault current
- The project will negatively impact WMECO's stability
- The project exceeds 7.5% of the total load on the line

The expected timeline for the Standard Interconnection Process is as follows:

- Within 10 days WMECO will review the application
- Within 30 days a scoping meeting will be held to determine what studies need to be performed
- Within 55 days WMECO and BlueWave will enter into a study agreement and complete the required studies
- If upgrades to WMECO's system are required, WMECO has 30 days to determine the type and cost of those upgrades
- From the day the interconnection application is received to completion, the total process may take a maximum of 150 days (125 days if no upgrades are required)

Once WMECO grants BlueWave the Approval to Construct, the photovoltaic system will be installed and interconnected. The last steps of the interconnection process include an inspection by local building



authorities, a system test conducted by members of the BlueWave team, and an on-site Utility Witness Test.

3.2. Electrical Design

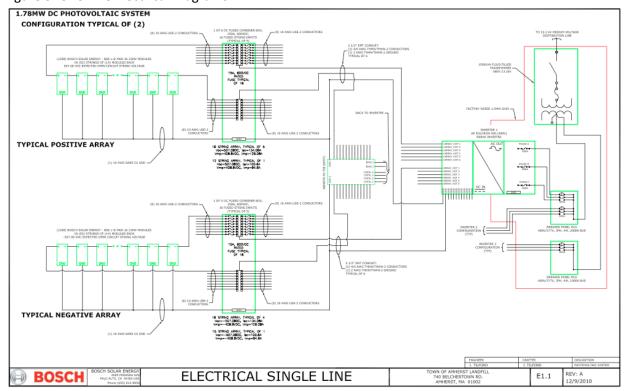
Bosch has completed an initial electrical design for this project. A preliminary one-line diagram for two of the three phases of the system are included in below in Figure 3. 8.5x11" scale version of the one-line diagrams are included in Appendix A. Bosch has consulted with WMECO, who advised that old landfill station would be upgraded to Rate Schedule G-2 with the addition of the 4.75MW PV facility. The one line diagram reflects this.

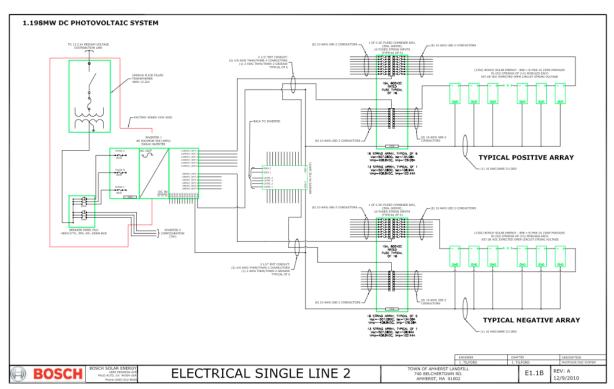
The project consists of 20,664 Bosch s-Si 230W PV modules. Pairs of these modules will be connected in series strings. Groups of 28 strings will be connected in parallel through combiner boxes. These combiner boxes will ultimately be connected to one inverter location.

The inverter stations contain 2x or 3x Advanced Energy Solaron 500 500kW inverters, which convert the DC output of the PV modules to AC power at 480V. The inverter pair will connect in parallel to a pad - mounted transformer. This will connect in parallel to the existing transformer serving the transfer station.

The team will install a Power Distribution Panel (PDP) which will house disconnect switches for the PV system and the transfer station allowing WMECO to safely and reliably perform maintenance on their system and the transfer station.

Figure 3: One Line Electrical Diagrams







3.3. Net Metering

The Town of Amherst's Solar Energy Project will net meter according to the regulations set forth in the Department of Public Utilities regulation 220 CMR 18.00. Because the project will be net metered, the "Additional Information for Net Metering Application" will have to be submitted (see Appendix G for this application form). BlueWave is familiar with this process and foresees no complications with obtaining interconnection and net metering agreements. WMECO's Net Metering Rules and Tariff information can be found in Appendices H and I.

3.4. Equipment Suppliers



BlueWave has chosen high-quality products for the proposed sites. For each system, our team proposes using **Bosch Solar Energy AG** photovoltaic modules, **Advanced Energy** inverters, and a **DECK Monitoring** data monitoring system. Every **Bosch Solar Energy** module is rigorously tested to ensure a zero negative-power tolerance, and comes with a 25-year warranty. **Advanced Energy** inverters are ideally suited for large commercial and utility-scale installations, featuring an industry-leading California Energy Commission efficiency rating of 97.5%. **DECK Monitoring** is a leading provider of critical monitoring services for the renewable energy industry, enabling real-time data to be viewed 24 hours per day on the DECK Monitoring website.

Our team proposes a ballasted ground mounting system for the project site. The team plans to use the **Schletter** or **Hilti** ballasted fixed-tilt mounting system. This system avoids penetrating the installation surface, while maintaining the integrity and security of the array. Manufacturer specification sheets are included in Appendix B.

3.4.1. Modules



Bosch Solar Energy supplies photovoltaic modules based on high-efficiency mono- and multi-crystalline silicon solar cells in the size 156 mm x 156 mm. These modules offer high efficiency and excellent value for money. Bosch Solar Energy has international acceptance as a "bankable" utility-scale module with



world-class production facilities to deliver large supplies of modules on-time. Bosch modules provide very good balance between cost, performance, and longevity.

BlueWave's customized equipment selection considered low-cost alternative panels, as well as highest-efficiency premium panels. BlueWave proposes Bosch Solar AG modules for the following reasons:

Zero negative power tolerance

- Every module is guaranteed to produce 230 watts (DC) or greater
- Most manufacturers offer a +/- 3-5% power tolerance, which means that a system could be getting 3%-5% less power on average

· Large PV manufacturer that is part of one of the largest industrial companies in the world

o Bosch AG is 125 year old company with a world class balance sheet

Committed to US market

- Bosch manufactures its crystalline modules in the US
- Bosch provides timely tech support, warranty claims, and module supply

Top Tier Manufacturer

- Bosch modules are deployed in some of the largest arrays in the world
- o Bosch is a vertically integrated manufacturer committed to continuous innovation

Industry-leading power warranty

- 10-year product warranty
- 25-year performance guarantee (90% at year 10; 85% at year 18; 80% at year 25)
- o Provides long-term protection against premature degradation

3.4.2. Inverters



The Advanced Energy Solaron photovoltaic inverters are ideally suited for utility-scale or large commercial photovoltaic installations. In addition to high-power and high-efficiency technology, this inverter offers advanced monitoring and control capabilities. Founded in 1981, AEI continually pursues profitable positions in new markets through strategic relationships, as well as through proprietary development of core technologies that further strengthen the company's position in process-critical, highly scalable, patented technologies.

Advanced Energy is a global leader in innovative power and control technologies for high-growth, thin-film manufacturing, and solar power generation. Specifically, AEI targets solar grid-tie inverters, solar cells, semiconductors, flat panel displays, data storage products, architectural glass, and other advanced product applications. AEI's product portfolio includes precise, flexible electrical power systems, reliable gas and liquid flow-management systems, accurate thermal instruments, and global support services. Leveraging this focused product portfolio and technology leadership, AEI creates solutions aimed at maximizing process impact, improving productivity, and lowering cost of ownership for its customers, including original equipment manufacturers (OEMs) and end users around the world.



AEI operates in regional centers in North America, Asia and Europe and offers global sales and support through direct offices, representatives, and distributors. AEI's factory in Shenzhen, China is fully operational and well positioned for continuous improvement to increase capability and capacity.

- Best-in-Class Performance
 - 250 kW, 333 kW, 500 kW at 480 VAC, 3 Φ
 - Industry-leading CEC efficiency rating of 97.5% and peak efficiency of 98.2% highest in North America
 - o Robust, transformerless architecture with bipolar PV array configuration (±600 V)
 - o Polymer film capacitor for higher reliability
- Compact and Ergonomic
 - Smallest footprint
 - o Lowest weight
 - Operating temperature: -35°C to 50°C
 - Quiet operation: 79 dB at one meter
- Advanced, Integrated Communications
 - Interface: LCD display with hard and soft lock-outs
 - o Communications: Integrated Moxa® server with 1GB of storage
 - o Remote access: system-integrated or third-party compatible
- UL1741-2005; NEC 690+; IEEE 519/929/1547
- Nearly three decades of experience in the solar industry

24 hours per day, 365 days per year global service and support

3.4.3. Mounting System



BlueWave proposes the Schletter Free Field (FF) Ballasted Racking System. Schletter is a global, privately owned company with a strong reputation for quality products and services. This racking system enables quick assembly of supporting structures for photovoltaic panels.



With only six matched components required for the basic mounting structure, as well as pre-assembled connectors, Schletter mounting systems are quick and efficient to install. This mounting system is

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lightweight and designed for use with the most popular types of photovoltaic panels. Schletter racking systems are adaptable to different foundation types, and therefore the best choice for any installation.

- Easy installation only six components required for the basic mounting structure
- Very easy and fast set up thanks to use of pre-assembled connectors
- Light weight and comfortable to assemble
- Intuitive and easy to install connection parts

3.5. Operations & Maintenance Plan

Operator will be responsible for Operations and Maintenance for the proposed sites. Bosch is successfully serving this function for numerous facilities at other sites around the world. Photovoltaic systems have very limited routine maintenance requirements, as there are few moving parts to break, although it is advisable that a visual inspection occurs on an annual basis.

Through monitoring and proactive maintenance of a photovoltaic (PV) system, Bosch can maximize the uptime of an array, help avoid unexpected operating and maintenance costs, and enable the system to achieve the lowest life-cycle cost (\$/MWh) for solar generation. With decades of experience in building and operating PV systems, Bosch has the expertise, knowledge, and trained technicians to provide comprehensive and full-service maintenance for PV systems.

Maintenance and repairs of the facility can be done while the plant is not producing power in the early morning and early evening. Additionally, individual sections of the plant can be taken offline for any other needed repairs, with negligible impact on plant output. In the sections below, we describe the four key elements of our Operations and Maintenance Program:

3.5.1 Solar Array Operations and Maintenance Program:

- Visual inspection of array's general site conditions, PV arrays, electrical equipment, mounting structure, fence, shading, trackers, vegetation, animal damage, erosion, corrosion, and discolored panels. 1x per year
- Visual inspection and correction of SPS for loose electrical connections and ground connections.
 1x per year
- String level open circuit voltage, DC operating current tests, and I-V curve traces on 25% of strings. 1x per year
- Switches and disconnects test to ensure they are not jammed. 1x per year
- Sensors and meters, including pyranometers, anemometers, and tilt sensors: 1x per year
 - o Record meter readings as available. 1x per year
 - Turn off and on to ensure they are communicating and ensure battery backups are working. 1x per year
 - Exchange units with Owner's spares for calibration per manufacturer's instructions.
 Report serial numbers of exchanged units. Calibration costs are Non-covered Services.
 As needed.

3.5.2. Inverter Operations and Maintenance Program:

- Service for 2 Solaron inverters:
 - Replace filters, check pressure gauges (address as necessary), check MOVs, thermal imaging (address connections and hot spots), inspect DC fans (replace as necessary),

Town of Amherst RFP for Old Landfill Reuse Proposal



inspect weather stripping (replace as necessary), inspect AC contactor (replace parts as necessary), and clean large heat exchanger on 333 kW. 1x per year

- Clean large heat exchanger on 500 kW, replace fans, inspect small heat exchanger.
 Every 5 years
- Replace MOXA box and replace blower. Every 10 years
- Include 99% uptime guarantee for Solaron inverters. Specific details per separate agreement by reference on request.
- Clear debris within the fenced area. If this activity becomes excessive, Owner and Contractor will agree upon a method to have this work performed as Non-covered Services. 1x per year
- Written service report within 10 days:
 - Include details of preventive maintenance work, such as meter readings, thermal images, and system testing results. 1x per year
 - Include non-conformance reports to identify potential short-term and long-term power production issues. 1x per year

3.5.3. Service Support

- Contractor will make available a 24x7x365 Technical Support. Ongoing
- Dispatch commitment: dispatch resources in response to alarms and alerts/service requests received by Contractor from Owner. To be billed on T&M basis when request made.

3.5.4. On-site Request and Issue Resolution

- Issue resolution: After Bosch or subcontractor arrives on site in response to a request received from Owner, Bosch or subcontractor will follow protocols below depending on the circumstances causing the request:
 - Solaron inverter event: repair Solaron. There is no charge if Solaron inverter is under AE warranty. If out of warranty, then apply T&M fees. Issue is resolved when the Solaron inverter is available. Upon occurrence
 - Event that is covered by insurance: Bosch reports situation to Owner. Apply T&M fees for the site visit. Issue is resolved when Bosch reports the event and diagnosis to Owner. Upon occurrence
 - Event that Bosch is pre-authorized to repair: Examples include fuse replacement, terminal block replacement, motor replacement (up to 1.5 hp), single wire issue between module and combiner box. Bosch completes repair up to the dollar limit of stipulated in 1.2b. Apply T&M fees. Issue is resolved when Bosch completes the repair. Upon occurrence
 - Event that Bosch cannot repair without prior authorization from Owner: Examples
 include complex ground wiring issues, ground fault resolution, solar panel replacement,
 and major component replacement. Apply T&M fees for the site visit. Issue is resolved
 when Bosch reports the event and diagnosis to Owner. Upon occurrence

In the event of an alarm, alert, or service request, Bosch will dispatch resources within two business days. Within thirty days of performing any maintenance service, Bosch will provide the facility manager with a written maintenance report.



4. FINANCING PLAN

4.1. Overview

The BlueWave Capital project team and its partners have a well–established financing track record for solar PV projects, with direct experience executing project finance transactions for several dozen projects in Massachusetts and across the country. BlueWave Capital will arrange construction financing through Bosch Solar Energy AG, its EPC partner. Construction financing will be secured through the Bosch balance sheet. Take–out of the project will occur at commercial operation and will include both equity and long–term debt.

Each member of the BlueWave team has the necessary financial resources to undertake their respective obligations under this proposal and to back their work with credit guarantees and warranties consistent with industry standards. If the BlueWave team is selected to enter into negotiations with the Town of Amherst, our team will engage Smart Energy Capital as the long-term owner and operator of the system.

As the long-term owner/operator of the projects, Smart Energy Capital will arrange long-term project financing, including both equity and debt. Financing terms and the ultimate capital structure of the project will depend on prevailing market rates at the time the project is financed.

As privately held companies, BlueWave Capital, Smart Energy Capital, and Tighe & Bond, do not publish financial statements. Bosch Solar Energy AG, the team's Engineering, Procurement & Construction (EPC) partner is one of the world's largest industrial conglomerates with over 270,000 employees worldwide and over \$40 billion in worldwide sales. TRC Solutions is a publicly traded (NYSE: TRR), Massachusetts based engineering, consulting and construction management firm providing integrated services to the energy, environmental and infrastructure markets nationwide with over 2,400 professionals and 70 offices throughout the United States. Appendix K includes a summary of Bosch AG's most recently available financial statements. Smart Energy Capital has capital commitments of \$180 million from Duke Energy Services and Integrys for the development of solar photovoltaic projects in the United States. Appendix O contains a letter of interest from Smart Energy Capital for this project as well as a press release from Duke Energy Services and Integrys announcing their capital commitment to Smart Energy Capital.

The Town of Amherst Solar Project, will qualify for a 30% investment tax credit from the federal government, or an equivalent cash grant from the Department of the Treasury under provisions of the American Reinvestment and Recovery Act (ARRA). This cash grant allows the BlueWave Capital team to assume lower cost financing options which would be reflected in a somewhat lower electricity price for Amherst than assumed in this proposal.

An additional factor that improves the project team's ability to finance the project is the value of the Solar Renewable Energy Certificates (SRECs) as discussed earlier in this proposal. By limiting the project to less than 6MW as per DOER regulations, the project qualifies for SRECs. Under DOER regulations, a project of larger size would receive Class I Renewable Energy Credits, which trade at a lower value per kWh than SRECs given their lack of a price support mechanism such as the one established for SRECs by the DOER. By limiting the size of the Town of Amherst project and securing SRECs, BlueWave Capital has helped ensure the financial viability of the project.

4.2. Subsidies

BlueWave Capital intends to utilize the following federal incentives to finance the Amherst solar photovoltaic project. Private sector participation in this project significantly benefits Amherst, which by itself it would not otherwise be able to monetize these tax credits and depreciation benefits.



<u>Federal Investment Tax Credit</u>: The credit or grant is equal to 30% of expenditures, with no maximum credit for eligible solar energy property, which includes equipment that uses solar energy to generate electricity. The credit is available for projects completed through December 31, 2016, and may be carried forward for 20 years if the value of the credit exceeds the entity's tax liability. BlueWave is certain that the Amherst project will receive this incentive.

Modified Accelerate Cost Recovery System "MACRS" Depreciation: Under the Federal Modified Accelerated Cost-Recovery System (MACRS), businesses may recover investments in certain property through depreciation deductions. The MACRS establishes a set of class lives for various types of property, ranging from 3 to 50 years, over which the property may be depreciated. Solar Energy Systems are classified as a five-year property under the MACRS, and are thus fully depreciated for federal income tax purposes within five years of their commissioning. Under MACRS, PV systems placed in service after 1986 are eligible for the depreciation schedule shown in Table 2 below. BlueWave is certain that the project will receive this incentive.

The recently enacted 2010 Tax Act for 100% bonus depreciation for property acquired and placed in service after September 8, 2010 (i.e., not the date of enactment, or next year, like you might have expected) and before 2012, and 50% for 2012. Under this new accounting rule, if the Old Landfill photovoltaic system is completed during the 2011 calendar year, 100% of the asset will be depreciable during its first year of operations. If the photovoltaic system goes in service during 2012, the 50% Bonus Depreciation rule will apply. We have assumed for this proposal that the photovoltaic system will be commissioned during calendar year 2011.

Table 2: MACRS Depreciation Schedule

MACRS Depreciation Schedule for Solar Energy Systems

<u>Year</u>	<u>Percentage</u>	
1	20%	
2	32%	
3	19.20%	
4	11.52%	
5	11.52%	
6	5.76%	

Source: IRS 2005

<u>Grants and Rebates:</u> This proposal does not assume grant funding for the project becoming available. Nevertheless, we believe that we may be able to secure certain state and federal brownfields funds and federal loan guarantees. We will make every effort to do so and, if successful, the benefits of all such public support will be fully passed on to Amherst in the form of further electricity cost reductions.

4.3. Incentive Payments

The Massachusetts Department of Energy Resources (DOER) recently approved a Solar Carve-Out that effectively creates a Solar Renewable Energy Certificate (SREC) market that began operating in January 2010. This Solar Carve-Out is specifically designed to facilitate the development of solar photovoltaic (PV) energy and mandates that a certain percentage of the state's total electricity supply must be provided by solar PV. This percentage is designed to increase each year until 400 megawatts (MW) of PV are installed, providing approximately 1% of the state's total electricity supply. The text of Massachusetts Renewable Portfolio Standard can be found in Appendix O.

As part of this effort, the state has implemented the MA Solar Credit Clearinghouse as a last resort, fixed-price auction in the last quarter of each year with a fixed price of \$300 per SREC less a 5% fee,



resulting in a floor price of \$285. This establishes a floor price for Massachusetts SRECs and gives project owners a minimum value they can expect per SREC.

The RPS Solar Carve-Out is a part of the larger Massachusetts Renewable Portfolio Standard (RPS) that was established in regulations issued by the Massachusetts Department of Energy Resources (DOER) in 2002. The regulations require that 1% of the state's electricity supply come from new renewable sources by 2003. This percentage increases by 0.5% each year until it reaches 4% in 2009. Following 2009, it will increase by 1% each year, reaching 15% by 2020, and continuing until the DOER suspends the annual increase.

Solar photovoltaic projects that have received funding from programs administered by the Massachusetts Clean Energy Center or Renewable Energy Trust prior to the start date of the Solar Carve-Out Program (January 1, 2010) and those that received substantial funding (over 67% of total installed cost) from the American Recovery and Reinvestment Act (ARRA) federal stimulus programs are not eligible to participate in the SREC program.

Given the early stage of development of this compliance market, there are at this point a limited number of systems that have been qualified for participation in the Solar Carve Out. The first SRECs in Massachusetts were sold during the second quarter of 2010. About one dozen SRECs changed hands in that first transaction. In addition, there presently is only approximately 6.5 MW of qualified solar photovoltaic capacity within the state out of a required 30 MW by YE2010 and 69 MW by YE2011. A small fraction of those systems have been installed to date, with the majority of them being small commercial and residential systems.

The ability to monetize these environmental attributes in the form of tradable SRECs makes it possible for BlueWave to offer the Town of Amherst a long-term power contract at a price that is substantially lower than its current avoided cost of electricity. Recognizing the nascent nature of this market, BlueWave has made what it believes are prudent assumptions regarding the trading values for these SRECs.

Therefore, if BlueWave is able to secure SREC prices that are higher than those we are currently assuming, we will share those increased project revenues with the Town of Amherst in the form of a lower energy price – or an annual direct cash payment - during the relevant term of the SREC contract.

5. RESOURCE SUPPLY

An important factor in determining the financial viability of any renewable energy project is analyzing and clearly understanding the solar energy resource available on site. BlueWave produced solar resource and production estimates using PV simulation software created and maintained by the National Renewable Energy Lab (NREL). The Solar Advisor Model (SAM) program is configured to use meteorological data from the most similar location in the NREL Typical Meteorological Year (TMY) 2 or 3 database. BlueWave has generated a 365-day solar resource report using SAM, a comprehensive meteorological reference, incorporating a catalogue of meteorological data and calculation procedures for solar applications and system design at any desired location in the world. It is based on decades of research by the NREL in the development of meteorological databases for energy applications. BlueWave's detailed production calculations are included in Appendix J.

In order to provide a higher confidence interval production forecast. However, unlike wind, the solar resource is much more broadly distributed, predictable, and, by definition, less susceptible to local variability. For this reason, BlueWave does not expect meaningful deviations from our forecasted capacity factor, and can proceed with development and contracting on the basis of the SAM data.



Refer to Figures 4 and 5 below to see the average solar resource profile available for the Amherst Solar Project. These figures show the average solar resource of the project site for each hour of each month of the calendar year. The data is based on the latest version of the NREL's Typical Meteorological Year model, TMY3. The TMY3 model uses the latest and most comprehensive set of data available in the National Solar Radiation Data Base (NSRDB). The TMY3 data set covers the 1991-2005 period. Figure 5 shows our preliminary estimates for production out of our proposed facility. Our detailed production forecasts are attached in Appendix J.

Some models currently generated by the industry are based on the older TMY2 model data set, which is based on data collected between 1960-1991. In addition, the TMY2 model generally collected data at two sites per state. Data for Massachusetts is based on collected information from meteorological stations in Boston and Worcester. TMY3 data, which we have used for this analysis, however, is collected from fifteen (15) sites in Massachusetts.

Some deviation is to be expected over the life of the facility as this data represents a long - term average. However, these estimates provide a very close approximation of what the level of solar resource available will be for the Amherst solar project. Figure 6 includes a summary of the expected production from the system to be installed at the Old Landfill in the Town of Amherst.

Figure 4: Distribution of Available Solar Resource

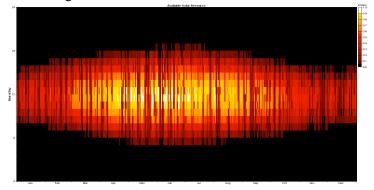


Figure 5: Average Solar Resource Time Series

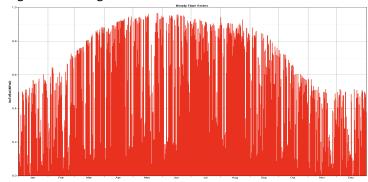


Figure 6: Expected Production at Old Amherst Landfill

VSYST V5.2	41								16/12/10	Page 4
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6. RISK MANAGEMENT

The purchase of a solar energy system through a Power Purchase Agreement (PPA) is an extremely risk-averse activity as the town is not responsible for any upfront investment or capital improvements. All our projects are fully backed by a credit guarantor. If, in the unlikely event that we were unable to fulfill our duties as owner, this creditor would assume responsibility and execute all obligations of the existing contract; this would include the removal clause. The transition would occur seamlessly, with no impact to the Town. If the Town requires additional assurances regarding the stability of this project, our Team is willing to meet with Town representatives and discuss alternate means of assuring the project's success.

6.1. Insurance

Bosch Solar Energy AG, BlueWave's EPC partner, is a fully insured solar contractor. Upon successful awarding, the team will provide evidence of liability insurance in an amount, and for a term sufficient to cover loss or damage to persons and property occasioned by the failure of the facility.

6.2. Indemnification

BlueWave will hold harmless and indemnify the Town and its officers, agents, and employees against all claims, demands, actions, and suits (including attorneys' fees and costs) brought against any of them arising from the contractor's work or any subcontractor's work under the contract.

6.3. Regulatory and Legislative Risk

Each member of the BlueWave Team keeps abreast of local and federal legislation that may have an impact on renewable energy. Several members of the BlueWave team have assisted legislators and the Patrick administration with crafting renewable energy law, regulations and policy. The Team is unaware of any currently pending legislative changes that would affect the financing of this project. In the event that such regulations are passed, the contract between the Town and our financial partner is binding, and our financial partner will fulfill all contractual obligations.

6.4. Excess Power Generation Risk

The basis of our agreement with the Town of Amherst is that it will purchase a predetermined amount of electricity on an annual basis at the rate proscribed in the PPA. We have sized the system so that the Town will be able to receive the full benefit from the net metering regulations. In addition, we describe the option of building a lager system to provide electricity to other members of the Town of Amherst.

7. TEAM QUALIFICATIONS

7.1. BlueWave Capital

BlueWave has worked with numerous municipalities and private businesses, including Fall River, New Bedford, Brockton, Boston, Chelsea, Stop & Shop, and Western Massachusetts Electric Company to identify sites that are suitable for photovoltaic installations, and to conduct the fatal flaw and financial analyses necessary to determine the feasibility of those sites. For many of the sites which have been found suitable for renewable energy development BlueWave has worked with cities and businesses to determine financing options, secure public and private capital, and oversee project development. BlueWave also worked with the Massachusetts Department of Energy Resources to provide counsel on Green Communities Act compliance to 26 Massachusetts communities. BlueWave's counsel, Jonathan Klavens, has similarly been extensively involved in energy and renewable energy project development



and energy transactional matters, including negotiating power purchase agreements, energy services agreements, and REC purchase agreements on behalf of private and public parties.

BlueWave has also worked extensively on issues associated with the redevelopment of contaminated properties including landfills similar to the Amherst Landfill.

As New England EPA Administrator, John DeVillars led a team of professionals in the design and implementation of brownfield development policies for the region, including expedited permitting, technical assistance, and grant funding programs for more than forty New England communities. As Massachusetts Secretary of Environmental Affairs, Mr. DeVillars was deeply involved in the development of the Comonwealth's first Solid Waste Master Plan and has remained active in solid waste policy development in the state.

BlueWave has also been actively involved in the redevelopment of many brownfield properties including the South Weymouth Naval Air Station (South Weymouth, MA), Jackson Square (Roxbury, MA), Providence Piers (Providence, RI) and the St Croix Renaissance Park (St. Croix, USVI).

7.2. Bosch Solar Energy AG

The Bosch Group is a leading global supplier of technology and services. In the areas of automotive, consumer goods and industrial technology, its 282,000 associates have generated sales of over \$68 billion in 2008. The Bosch Group comprises Robert Bosch GmbH and its more than 300 subsidiaries and regional companies in roughly 50 countries. Bosch has been present in North America for more than 100 years, and our North American headquarters is located in Michigan. Robert Bosch GmbH is a privately owned corporation that is almost entirely (92%) owned by a charitable foundation. The private ownership structure of Robert Bosch GmbH and its financial strength ensures that the company can stand behind the quality of its work and guarantee the product and output warranties of its solar modules and turnkey solar projects.

Bosch Solar Energy is a business unit of the Bosch Group and a manufacturer of high quality solar cells and solar modules for distribution all around the world and a turn key Project Developer. Bosch Solar Energy has over 1,700 employees and a head office in Erfurt, Germany. Bosch products are engineered in Germany and the company focuses on high quality, performance, and long-term energy output. The solar modules Bosch intends to use on the Amherst project are manufactured in the United States. Bosch's solar products are IEC certified for the European market and UL approved for the US market. Bosch Solar Energy's current solar cell manufacturing capacity is 230 MW, which will grow to 450 MW in 2011.

Bosch Solar Energy supplies first-class solar cells and modules with high annual yields, even under suboptimal levels of sunlight. The fundamental basis for such efficient operation consists of state-of-the-art production equipment and highly effective processes. Since 2009, Bosch Solar Energy has also been constructing turnkey solar power plants to order, which feature fully developed technologies with corresponding operating efficiency. Bosch can guarantee this thanks to optimally matched components. As a system provider, Bosch plans to offer Amherst in the mid-term all components required to build a photovoltaic power plant and thus supply everything Amherst needs from a single source: Bosch.

Bosch Solar Energy's Project team works both in the US and internationally to develop top quality turnkey solar projects. The Bosch Solar Energy team will plan, design, calculate energy yield and economic efficiency and manage the complete installation of the Town of Amherst's solar system.



As a strong, globally active company in the photovoltaics sector, Bosch Solar Energy helps to eliminate carbon dioxide generation during energy production. The company aims to ensure that photovoltaics represent a significant proportion of the future energy mix. To achieve this, Bosch Solar Energy is permanently improving performance in its cells and modules while working to reduce production costs and develop future solar cell and module concepts. All this is guided by the company's vision as a global, future-oriented technology leader to contribute towards a safer, cleaner supply of energy, while offering competitive prices. See Appendix K for Bosch Solar Energy AG's qualifications.

7.3. Tighe & Bond

Tighe & Bond, Inc., founded in 1911, is one of the oldest continuously operating engineering firms in New England. BlueWave and Tighe and Bond have worked closely together on numerous projects and member of the BlueWave and Tighe and Bond teams assigned to this project have extensive shared experiences in environmental permitting and regulatory matters of relevance to the Amherst solar project.

Tighe and Bond has provided consulting services to a wide variety of municipal and private clients throughout the region. Over the years, Tighe & Bond has evolved from a firm engaged in the general practice of civil engineering to one specializing in environmental engineering and consulting. In addition, they also provide services specifically to the solar market and to municipalities interested in pursuing solar opportunities. Please see Appendix L for supporting documentation regarding Tighe & Bond's solar qualifications and experience.

7.4. TRC Solutions

TRC can help you reduce your energy costs, secure your energy supply and create a sustainable energy program. We have provided energy services and advice to our clients for over four decades, and our multidisciplinary teams can support you with our proven experience in energy assessments, asset management of energy infrastructure as well as the development of renewable energy solutions. For this particular opportunity in Amherst we bring you the experience of having permitted the only solar PV facility on a MSW landfill in the Commonwealth.

Serving the public and private sector with solar and renewable energy design and development, TRC offers our long-term working relationships with utilities, developers, and municipalities/counties to build solar projects that maximize profits and have minimal impact to the environment.

Our engineers and scientists have been at the forefront as the U.S. responds to changes resulting from the nation's transition in government policies toward renewable energy development, end user energy management, and environmental protection. We are proud of our past and we are dedicated to supporting the energy industry to meets the needs of a growing nation.

7.5. Smart Energy Capital, LLC

Smart Energy Capital, LLC develops and finances solar PV projects throughout North America. The Company's management team has extensive experience in solar project development, structured finance and investment management. Prior to founding the Company in 2009, the Company's management team served as senior executives at SunEdison and Lehman Brothers, where they gained direct, firsthand experience in the industry. Their experience includes development of over 300 MW of solar PV projects and the raising of over \$200bn of structured capital for a wide range of asset types. In

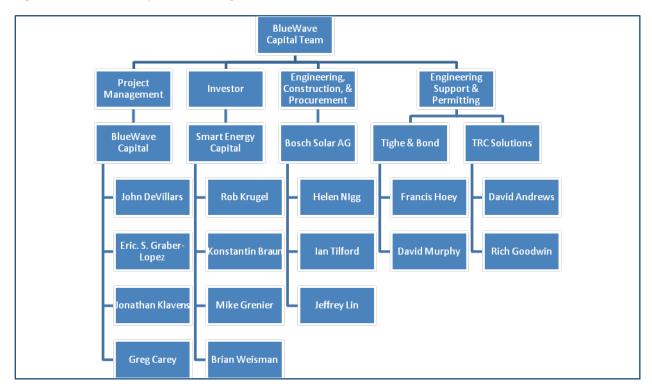


addition, one of the Company's managing partners successfully raised and invested in excess of \$1bn as an investment manager.

Smart Energy has established a strategic partnership with two large utilities, Duke Energy (NYSE: DUK) and Integrys Energy (NYSE: TEG), to provide 100% of the capital to build, own and operate commercial scale solar PV projects throughout the United States. The initial funding capacity of the program is \$180 million. Under the program, Smart Energy develops the projects and transfers ownership of the projects to the partnership between Duke Energy Generation Services and Integrys Energy Services prior to the start of construction. The Duke/Integrys partnership provides 100% of the capital to build the projects, and owns, operates and maintains the projects during their lifetimes. The partnership has sufficient "tax capacity" to fully utilize all available Federal tax benefits associated with the solar PV projects, which optimizes the cost of project capital.

8. Personnel Qualifications

Figure 7: BlueWave Capital Team Organization Chart



8.1. BlueWave Capital

Mr. John DeVillars will be responsible for insuring overall project excellence, including, timely and responsive communication with Amherst officials. Mr. DeVillars has served as Managing Partner of BlueWave Capital since 2003. From 2000 to 2003, Mr. DeVillars served as the Executive Vice President of Brownfield Recovery Corporation (BRC), a Boston-based real estate investment and development company focused on environmentally impaired properties. Prior to his role with BRC, he served as the New England Administrator of the U.S. Environmental Protection Agency and as Secretary of the Environment for the Commonwealth of Massachusetts. Mr. DeVillars serves on numerous public and private company and non-profit boards including the Executive Committee of the New England Clean



Energy Council and the Board of Directors of Clean Harbors, Inc; Alteris Renewables, Inc. and NextStep Living, Inc. He earned his Master of Public Administration degree from Harvard University, and his Bachelor of Arts from the University of Pennsylvania.

Mr. Eric Graber-Lopez is deeply involved in the management of BlueWave Capital's financing and project management with a particular focus on solar photovoltaic, community wind, and advisory services. Prior to joining BlueWave Capital, Mr. Graber-Lopez served as Vice President and Senior Equity Analyst on the Specialty Equity Growth Team at Putnam Investments; his key areas of focus were the Energy, Alternative Energy, Materials, and Utilities sectors. He was responsible for the team's investments in those sectors across a number of mutual funds. Prior to his experience in investment management, Mr. Graber-Lopez spent several years as an equity research analyst in New York focused on the global energy industry with Caspian Securities and Commerzbank AG. During his years on Wall Street, Eric was recognized by multiple industry surveys as one of the top analysts in his field. Mr. Graber-Lopez holds a Master of Business Administration degree from the Alfred P. Sloan School of Management at the Massachusetts Institute of Technology, as well as a Bachelor of Arts degree in History and Economics from Hampshire College.

Mr. Jonathan Klavens, who will provide legal support to the team, is a Principal with Klavens Law Group, P.C., and Lead Counsel for BlueWave Capital. Mr. Klavens has represented private, for-profit, nonprofit, and public entities in connection with energy and energy-related transactions for ten years. His experience includes acting as special counsel to the Town of Orleans, Massachusetts in connection with a proposed community wind project on municipal land, providing legal support for a nonprofit organization facilitating solar energy projects on public schools in New Orleans, Louisiana, and drafting loan documents for a nonprofit lender financing several renewable energy and energy efficiency projects in Massachusetts and Connecticut. He speaks often at conferences, seminars, and workshops throughout Massachusetts on renewable energy topics such as interconnection standards, net metering, back-up rates, and long-term renewable energy purchasing by utilities. Mr. Klavens earned his Bachelor of Arts degree in History from Columbia University, his Master of Public Policy degree from the Kennedy School of Government at Harvard University, and his Juris Doctor degree from the Northeastern University School of Law.

Mr. Gregory Carey is a consultant to BlueWave Capital LLC. He advises real estate and renewable energy development companies in the areas of site acquisitions, development, project permitting and project management. Mr. Carey currently is assisting a wind energy client with developing a 30 MW utility scale project in western Massachusetts. He is also involved in permitting a 1 MW solar PV facility on a closed landfill in eastern MA. Mr. Carey's previous experience includes managing the redevelopment of urban brownfield sites, located in Everett, MA and Woodhaven, Michigan, into retail power center projects totaling 1.3M square feet. Prior to establishing his consulting business, Mr. Carey worked from 2000-2008 as a Vice President at Conroy Development Corp. where he managed the permitting and redevelopment of a 32 acre closed landfill site in Stoughton, MA, including the development of a \$12M Solid Waste Handling & Recycling Facility. He is the former Chairman of the Town of Holliston Zoning Board of Appeals and is currently a member of Holliston's Affordable Housing Trust Fund Board of Trustees. Mr. Carey is a graduate of Assumption College in Worcester, MA.

8.2. Bosch Solar Energy AG

Jeffrey Lin is responsible for project development at Bosch Solar Energy. In this role, Jeff drives the project development process including managing partners and customers, managing the development schedule and ensuring execution of all development tasks. Jeff brings three years of technology investment experience and deal execution in solar energy finance. He was previously an Associate at



the venture capital firm Crosslink Capital where he drove investment due diligence in solar energy and other clean technology start-up companies. Prior to that, Jeff was a Research Associate at Global Crown Capital, a boutique investment bank focused in technology and covered solar energy and semiconductor capital equipment equities. Jeff received his B.S. in Materials Science & Engineering from the University of California at Berkeley.

Helen Nigg, is the Director of Sales for Bosch Solar Energy North America. Ms. Nigg has over 15 years of experience in senior marketing, business development and sales positions in the solar, technology and retail industries. Bosch Solar Energy is a leading provider of silicon-based photovoltaic products with a consistent focus on product quality. From small-scale plants for single-family homes to finished large-scale photovoltaic projects — Bosch Solar Energy offers high-quality solar cells and modules for photovoltaic power generation. With its high-efficiency crystalline and thin-film products, Bosch Solar Energy focuses very deliberately on the sustainable and environmentally friendly form of silicon-based solar power generation. Ms. Nigg was recently appointed Commissioner of the Treasure Island Development Authority (largest sustainable development project in US) by the Mayor of San Francisco. Prior to joining Bosch Solar Energy Ms. Nigg was Director of Sunlight Electric, the San Francisco Bay Area's premier designer and retailer of commercial photovoltaic systems with a major focus on the sustainable food, beverage, and agriculture-related market sectors. Ms. Nigg holds a Bachelor of Arts degree in Economics from Smith College.

lan Tilford leads Bosch Solar Energy's engineering and design. In this role, he is responsible for system design, component selection, vendor evaluation, drafting, costing, and collaboration with contractor partners. Prior to Bosch, Ian consulted for REC Solar for design and execution of PV systems, and in this role reduced REC Solar's backlog by designing 1MW of projects in 4 months. Prior to REC Solar, Ian held several roles at Solon Corporation, first in R&D evaluating the manufacturing process for assembly of PV modules. Additionally Ian was responsible for monitoring and evaluating performance of Solon's installed PV power plants. After this, Ian was promoted into design and engineering, where he designed 8MW of PV Power Plants. Ian holds a B.S. in Optical Sciences & Engineering fro the University of Arizona, and was awarded a Research Experience for Undergraduates grant through the National Science Foundation.

8.3. Tighe & Bond

Francis J. Hoey, III, P.E., LEED AP, Senior Vice President/Principal In Charge, is an experienced member of our civil engineering group with specialized expertise in structural and geotechnical engineering. Drawing upon his strong technical background, advanced computer skills, and heavy construction experience, he has developed innovative and cost-effective solutions to a wide array of difficult engineering challenges. He holds professional registrations in two disciplines, civil and structural. As Chairman of Holyoke Gas & Electric and a member of the city's Planning Board, he has gained practical experience in both municipal government and the power and telecommunications industries.

Fran has served in a lead design and management role for many of our large scale development projects including the massive mixed use development in Redding, CT known as Georgetown (national smart growth award winner); the multi-developer, mixed-use Danbury Reserve which will include nearly 2,200 high-end residential units and over 1,000,000 SF of office, hotel, and retail space; and the Village at Hospital Hill, a high profile, joint public/private redevelopment of the 124-acre Northampton State Hospital site.

Brian S. Huntley, P.E., will provide site/civil engineering services to the project as required by conditions at each site. Brian has experience with public and private civil engineering projects and is a resident of Easthampton. Brian has designed and managed a variety of projects, prepared project schedules and



cost estimates, developed technical specifications, successfully guided projects through the regulatory permitting process, and provided bidding and construction phase engineering services. His diverse experience includes Massachusetts Highway Department-funded roadway reconstruction projects, water and sewer extensions, and stormwater treatment and Low Impact Development (LID) approaches to reconfigure existing parking and open areas. Brian has extensive experience in solid waste related projects, including design and permitting for post closure activities. His renewable energy experience includes access and staging area design for some topographically and environmentally challenging site locations.

David Murphy, P.E., Senior Engineer, is a civil engineer with 22 years of senior project management experience. He has managed major infrastructure project in the aftermath of the 2004 Tsunami, led an Environmental Engineering firm, and managed major and complex projects for the Commissioner's office of the Massachusetts DEP helping to manage the environmental oversight of the \$14.5 Billion Big Dig, the Army Corps of Engineers (ACOE) Boston Harbor dredge project, and served as program manager for all Massachusetts Environmental Policy Act (MEPA) projects including wastewater treatment facilities and power plants.

Christopher D. Haker, P.E., will provide geotechnical engineering services to the project as needed for each site under assessment or development. Chris has a background in foundation and earth retaining structure design and analysis, and soils engineering, that equips him to serve as project manager and technical lead on a wide variety of projects. He has performed engineering analysis and design, and prepared contract drawings and specifications for building foundations (shallow and deep), blasting, earthwork, temporary earth support, and permanent retaining wall structures. Chris has also conducted analysis, design, and forensic investigations of mechanically stabilized earth walls. His construction observation experience includes shallow and deep foundations, soil/cement mix columns, deep dynamic compaction, tieback testing, advanced drilling techniques including in-situ testing and instrumentation installation, and earthwork operations.

Craig S. French, P.E. will provide structural engineering services to the project for both ground- and roof-mounted systems. Craig has over 10 years of professional experience in structural design and evaluation of commercial, institutional, and industrial buildings and bridge engineering projects. As manager of the structural department, he is responsible for structural engineering and architectural design and is involved on most projects from conceptual design and planning through final design and construction. Additionally, Craig has provided structural design services to a series of wind and solar projects currently under assessment.

Peter Wozniak, P.E., CPE, DGCP, CPQ, will provide electrical engineering services to the project. Peter is an electrical engineer who specializes in power distribution and electrical system designs for all types of facilities and utility distribution systems. He is responsible for the design and specification of power, lighting, instrumentation, lighting, fire detection, intrusion and access control, public address existing telephone and instrumentation systems. He troubleshoots problems with electrical systems at new and existing facilities and coordinates start up operations for new systems. He provides review and analysis of the operation and maintenance of building systems, electrical, mechanical, HVAC, and utility supply systems including electrical distribution and steam distribution. He also performs electrical forensic studies, provides electrical survey services (equipment condition and National Electrical Code compliance), and consults on electrical energy efficiency improvements. Peter was responsible for the preparation a comprehensive campus wide infrastructure master plan for Deerfield Academy, which identified future infrastructure needs of the school and methods for integration of planned building improvements into existing campus systems.



Daniel P. Rukakoski, PWS, RSS, will provide wetland delineation and permitting services for the solar projects as required by the site conditions. Dan is a senior environmental scientist in the Environmental Services Group at Tighe & Bond. He has over 14 years of experience in wetland delineation, environmental and energy permitting, regulatory negotiations, construction observation, and remedial investigations. Dan has successfully completed several projects that have required expedited or emergency permitting due to failing infrastructure, including several dam maintenance, repair and breaching projects throughout the northeast. He completed an emergency bank stabilization project in Williamstown, MA to prevent an exposed sewer line from failing; completed an emergency dam breaching project in Springfield, MA to prevent a failing dam/spillway from bursting and causing downstream property damage; and also completed an emergency slope stabilization project in Clinton, MA for the Massachusetts Department of Conservation and Recreation to repair a washed out road and slope.

Michael Zylich, P.G., LSP, is a Project Manager and Licensed Site Professional (LSP) within Tighe & Bond's hydrogeology group specializing in environmental cleanup and redevelopment and water resources projects. His environmental field experience includes observing drilling and remediation operations, installing groundwater monitoring and water supply wells, emergency response activities, landfill gas monitoring and inspections, and sampling of soil, groundwater, sediment, stormwater, and building materials. His water resources skills include town-wide new water source investigations, pump tests, resource area delineation, groundwater discharge and aquifer protection studies, hydrogeologic modeling, design drawings and specifications, permitting, cost estimate preparation, report writing, construction bidding and administration, and construction site monitoring for water supply, wastewater, and stormwater projects.

8.4. TRC Solutions

Mr. Larry Ancell, P.E. of TRC has more than 40 years of experience as an engineer specializing in the planning, design, construction and operations of electric utility systems for a broad array of applications. A registered engineer in 11 states, he brings significant expertise in power systems studies, facility design, and system operations and maintenance. Mr. Ancell is skilled in the design and project management of substations for electric cooperatives and municipal electrical systems. He has also designed distribution systems for oil field applications, gas processing facilities and compressor stations. He has been involved in the design of electrical systems for water and wastewater treatment plants, sewer lift stations, and airport lighting.

Mr. David Andrews, P.E. of TRC has over 35 years of geotechnical, civil and environmental engineering experience. He has a broad background in the areas of soils and in the design and construction of earthwork and civil drainage projects. Work experience has ranged from service with the USDA Soil Conservation Service dam design and construction program to broad-based geotechnical engineering consulting with a small start up consulting firm, and from being senior engineer for design and engineer-of-record for the closure of Superfund Landfills to quarry permitting and large structure foundation evaluation. This breadth of experience has provided a solid base for his design, consulting and geotechnical engineering practice.

Mr. Rich Goodwin, P.E. of TRC has over 25 years of experience in distribution engineering, system planning and Geographic Information Systems (GIS). Over twenty years of his experience has been working directly with electrical utilities and five years working for a software company that developed GIS based electric utility applications including outage management, engineering design and cost estimating tools. Mr. Goodwin's experience includes senior engineering and management level responsibility in distribution engineering, project management, transmission and substation siting



justification and testimony, and cost benefit analysis of GIS systems and business process. He currently specializes in Area Studies, Construction Work Plans, Long Range Plans, Sectionalizing/Coordination Studies, Subdivision Design, Power Requirements Studies and GIS Consulting. He serves as Manager, New Mexico Operations - Power Delivery.

Mr. Patrick Scharff, P.E. is a Principal Electrical Engineer with over 30 years of engineering and management experience with investor-owned electric utilities. Mr. Scharff's expertise is in system planning, system operations, engineering, conceptual design and budgeting for substation, transmission line and feeder additions and modifications. His experience also includes construction project coordination, project scheduling and contract management. In addition to his planning and operations experience, Mr. Scharff also has extensive experience in the development and implementation of energy efficiency and load management programs and the integration of distributed generation into system operations. He has developed and implemented energy efficiency and load management programs and prepared the Demand Side Management portions of Integrated Resource Plans. His experience also includes the preparation and provision of expert witness testimony in support of rate cases and regulatory rule making dockets and working with community groups and jurisdictional agencies for consensus on construction projects.

8.5. Smart Energy Capital, LLC

Konstantin Braun has 14 years of structured finance and financial engineering experience; structured, rated and marketed over \$100bn of transactions including securitizations for Citibank, SallieMae, Ford, PSE&G, Dunkin' Donuts, ILFC, Hertz and Crown Castle. Formerly a Managing Director at Lehman Brothers, most recently Head of ABS/MBS Structuring; provided debt structuring expertise in connection with the origination and execution of asset-backed securities collateralized by a wide range of asset types; in addition, provided loan pricing and business strategy for Lehman's proprietary, non-mortgage consumer finance origination and securitization platforms. M.A. in Economics from Yale University; B.S. in Economics/Mathematics from Moscow University.

Mike Grenier has 10 years of renewable energy project development, project finance, and environmental policy experience; direct, hands-on experience with the acquisition, development, design and/or construction of over 8,000 MW of utility-scale solar and wind projects in the United States, Canada and Europe, including the first utility-scale solar PV project in Canada and the first wind farm in Idaho. Formerly led the establishment of SunEdison Europe and Canada, as Senior Director of Business Development; in less than one year, constructed over \$100mm of projects and acquired a 300 MW project pipeline representing over \$1bn in investment value. Formerly Director of Business Development at Ridgeline Energy; led strategy and finance, and helped develop Ridgeline's 8,000 MW project portfolio. Ridgeline was subsequently sold to the French energy company Veolia for \$72mm. B.A. with honors in Public Policy from Stanford University and an M.B.A. from the University of Maryland.

Rob Krugel has 15 years of investment banking experience in structured finance; pioneered several innovative financing structures including the first whole business securitization in the United States, the first use of securitization to finance a leveraged buy-out and the first capital markets based warehouse for residential mortgage originators; led many high profile, complex structured financings including transactions for Cerberus (Debis Airfinance), Clayton, Dubilier & Rice/Carlyle/Merrill Lynch (Hertz), Bain Capital/Carlyle/Thomas H. Lee Partners (Dunkin Brands), SBA Communications, Crown Castle and Dominos Pizza. Formerly a Managing Director at Lehman Brothers, most recently Head of Structured Finance; began career as corporate lawyer at Cravath, Swaine & Moore. J.D., cum laude, from Harvard Law School; B.A. in Economics with high distinction and Phi Beta Kappa from the University of Michigan.



Brian Weisman has 18 years of proven investment acumen, portfolio management and entrepreneurial successes. Co-founded Fort Point Capital (an equity hedge fund), from Apr. 2000-Dec. 2006 generated a 69.5 percent net unlevered return (92.6 percent gross) while the S&P 500 index returned -5.4 percent; previously Managing Director at Montgomery/Bank of America Securities and analyst at the Federal Reserve. M.B.A. from the Walter Haas School of Business at University of California at Berkeley with an emphasis in Finance; B.A. in Economics and Psychology from the University of Michigan.

9. Performance Record of Proponent

9.1. BlueWave Capital



City of Brockton, MA

In 2007, the Massachusetts Technology Collaborative (MTC) awarded the City of Brockton a \$225,000 grant under its Clean Energy Choice Low-Income Program to install a 24.48 kW photovoltaic system on two municipal buildings: the **Council on Aging Mary Cruise Kennedy Center** (7.02 kW) and the **Brockton Area Transit Center** (17.46 kW). BlueWave led the effort to draft and submit the successful grant application on behalf of the City, and assisted the City with managing the grant, including:

- Contractor Selection: procuring services for a contractor to design and install the solar project
 by writing Request for Proposals, organizing and leading the pre-bid conference, and creating
 and managing a proposal review team.
- **Project Management:** BlueWave worked with the City to ensure successful and timely design and installation of the solar project, including facilitating contracting, coordinating schedules, reviewing design deliverables, and overseeing project construction.
- Creation of Educational and Marketing Materials: BlueWave worked with the City to develop
 educational programming to teach the community about renewable energy, energy efficiency,
 and measures individuals can take to reduce their energy bills.
- Coordination with MTC and Reporting: BlueWave coordinated all interaction between the MTC
 and the city and prepared all reporting required by the MTC as part of this project, including
 progress reports and a Final Report describing the successful installation of the project and
 other program elements.

B L U E W A V E

CAPITAL



City of Chelsea, MA

In 2007, the Massachusetts Technology Collaborative (MTC) awarded the City of Chelsea a \$154,895 grant under its Clean Energy Choice Low-Income Program to install 12.96 kW of solar photovoltaic (PV) panels on three buildings: **Burke Elementary School, Wright Middle School, and the Chelsea Public Library**. The City envisions several significant outcomes from this project, including (1) a direct link to the science curriculum at the schools, (2) broad public exposure to renewable energy systems to raise awareness among local residents, and (3) a demonstration of the City's commitment to renewable energy. BlueWave led the effort to draft and submit the successful grant application on behalf of Chelsea and assisted the City with managing the grant, including:

- Contractor Selection: procuring services for a contractor to design and install the solar project, by writing the Request for Proposals, organizing and leading the pre-bid conference, and creating and managing a proposal review team.
- Project Management: working with the City to ensure successful and timely design and
 installation of the solar project, including facilitating contracting, coordinating schedules,
 reviewing design deliverables, and overseeing project construction.
- Creation of Educational and Marketing Materials: working with the City to develop educational
 programming to teach the community about renewable energy, energy efficiency, and measures
 individuals can take to reduce their energy bills, including the installation of a Data Acquisition
 System that feeds real time in-formation to MTC, the schools, the library and the City about the
 amount of energy the solar PV system is generating.
- Coordination with MTC and Reporting: coordinating all interaction between MTC and the City
 and preparing all reporting required by the MTC as part of this project, including progress
 reports and a Final Report describing the successful installation of the project and other
 program elements.

B L U E WAVE





City of New Bedford, MA

In 2007, the Massachusetts Technology Collaborative (MTC) awarded the City of New Bedford a \$115,805 grant under its Clean Energy Choice Low-Income Program to install a 9.9 kW solar photovoltaic (PV) array on the **Keith Middle School**, providing an opportunity for the City to demonstrate its commitment to a cleaner approach to energy generation. The City sees this as the first of a series of solar PV installations on other schools and municipal facilities. BlueWave led the effort to secure the grant and assisted the City with managing the grant, including:

- Contractor Selection: procuring services for a contractor to design and install the solar project, by writing the Request for Proposals, organizing and leading the pre-bid conference, and creating and managing a proposal review team.
- Project Management: working with the City to ensure successful and timely design and installation of the solar project, including facilitating contracting, coordinating schedules, reviewing design deliverables, and overseeing project construction.
- Creation of Educational and Marketing Materials: working with the City to develop educational
 programming to teach the community about renewable energy, energy efficiency, and measures
 individuals can take to reduce their energy bills, including the installation of a Data Acquisition
 System that feeds real time information to MTC, the school and the City about the amount of
 energy the solar PV system is generating.
- Coordination with MTC and Reporting: BlueWave coordinated all interaction between MTC and
 the City and prepared all reporting required by the MTC as part of this project, including
 progress reports and a Final Report describing the successful installation of the project and
 other program elements.



9.2. Bosch Solar Energy AG

On behalf of private and institutional investors, Bosch Solar Energy develops sites all over the world, which have the potential to house solar power installations. Bosch Solar Energy takes care of the planning of all possible options for outdoor, roof and facade systems with innovative technologies based on calculations of yield and profitability, and is responsible for the overall technical design and dimensioning of all system components.

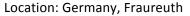
Location: Germany, Stuttgart

Construction: 2009
Total area (in m2): 7,000
Number of modules: 4,247
Power capacity (in MW): 0.955

Approx. annual power yield (in kWh): 870,000 Power generated for 4-person households/year: 250

Flughafen Stuttgart GmbH, Rolf Witzemann,

witzemann@stuttgart-airport.com, +49 711 948 3291



Construction: 2009

Total area (in m2): 60,814 Number of modules: 10,538 Power capacity (in MW): 2.423

Approx. annual power yield (in kWh): 2,400,750

CO2 reduction/year (in kg): 1,680,000

Power generated for 4-person households/year: 550 Carsten Rogall, c.rogall@stadtwerkemerseburg.de, +49

3461 454 102

Location: Germany, Ronneburg

Construction: 2009

Total area (in m2): 234,000 Number of modules: 49,246 Power capacity (in MW): 4.5

Approx. annual power yield (in kWh): 4,002,750

CO2 reduction/year (in kg): 2,646,000

Power generated for 4-person households/year: 1,144 Kaufhaus Schwager GmbH & Co. KG, Ralf Schwager, +49

5531 123 0







B L U E W A V E

CAPITAL

Location: Germany, Erfurt

Construction: 2009

Total area (in m2): 130,000 Number of modules: 21,898 Power capacity (in MW): 2.01

Approx. annual power yield (in kWh): 1,788,000

CO2 reduction/year (in kg): 1,182,000

Power generated for 4-person households/year: 511



Location: Germany, Bernburg

Construction: 2010

Total area (in m2): 86,000

Number of modules: 15,168 (crystalline)

Power capacity (in MWp): 3.450

Approx. annual power yield (in MWh): 4,140

Location: Flat Rock, Michigan

Construction: 2010

Total area (in feet2): 7,200 Number of modules: 480 Power capacity (in KW): 62

Approx. annual power yield (in kWh): 76,131

9.3. Tighe & Bond

Tighe & Bond provides engineering and permitting services to developers and integrators evaluating and installing ground - mounted solar systems. They provide engineering services to assist integrators and developers in preparing project scope and pro-formas. Their engineering experience and development of detailed opinions of probable infrastructure and site improvement costs effectively reduce the uncertainty associated with project finances. Tighe & Bond provides the following types of engineering services for solar projects, each of which may be applicable to the Amherst Site:

- Geotechnical assessment of sites for use in the selection of the PV array mounting system foundations (e.g. driven/rammed shallow piles; augured cast in place concrete footings; ballasted precast concrete; or screw - in shallow piles)
- Soil / Structure interaction assessment including: review of site conditions to identify project impediments, selection of the appropriate pile system, design, monitoring and documentation of pull out and lateral load tests, determination of maximum soil pressure loads, and development of design loads for footings
- Structural assessment of structures and review of building codes to determine allowable or recommended loads for roof - top mounted solar systems
- Site/civil design including: layout, storm-water design, sedimentation and erosion control, and development of drawings and supporting documentation required for site plan review
- Electrical engineering including: determination of interconnection and protection requirements, preparation of details for cable and conduit, circuit design, grounding design, protection schemes, and identification of appropriate transformer size and type, coordination study review and field checks, and equipment selection
- With respect to local building permit obligations, Tighe & Bond provides construction observation services for site/civil, electrical and pile installation. We also provide shop-drawing review, construction affidavits and record drawings as required.



In addition to working with solar developers, Tighe & Bond has assisted several municipalities in the Commonwealth with the development of both roof and ground-mounted solar energy projects. Their experience working with and for municipalities provides them with perspective from both the host municipality and the developer sides of the project. This unique attribute provides us the ability to assist involved parties and enable smooth project development.

For ground - based installations, Tighe & Bond has used their solid waste engineering experience to assess the feasibility of siting large systems on landfills. They have a dedicated team working on the leading edge of solar development that has provided the following solar energy - related services:

- Municipality wide surveys of potential properties for large ground based systems
- Transmission route assessment for siting in both investor owned utility and municipal electric department service areas
- Feasibility assessments for roof and ground mounted systems
- Grading and access plans for site preparation for large ground based systems
- Permitting strategies for installations

Tighe & Bond has assisted many municipalities in the Commonwealth with the development of both roof- and ground-mounted solar energy projects. For ground-based installations, we have used our solid waste engineering experience to assess the feasibility of siting large systems on landfills. Tighe & Bond has a dedicated team working on the leading edge of solar development that has provided the following solar energy-related services:

- Conducted municipality-wide surveys of potential properties for large ground-based systems
- Evaluated transmission implications for siting in both investor-owned utility and municipal electric department service areas
- Provided feasibility assessments for roof- and ground-mounted systems
- Prepared Requests for Proposals and Requests for Qualifications for publically-bid projects under MGL C. 25A
- Developed grading and access plans for site preparation for large ground-based systems
- Assessed permitting strategies for installations, including systems on landfills and within site assigned areas requiring either Minor or Major Post-Closure Use Permits
- Advised on aspects of deal structures, including Power Purchasing Agreements

Tighe & Bond is very knowledgeable on regulations that apply to solar systems as well as State incentive programs such as the Massachusetts Renewable Portfolio System Carve-Out, Solar Renewable Energy Certificates (SRECs), and net-metering.

9.4. TRC Solutions

TRC provides professional services for utility-scale solar photovoltaic projects (> 1 MW). TRC works with developers, utilities, and government agencies to support both utilities and private sector clients on solar projects. We provide candidate site environmental and technical screening and assessment; project engineering; permitting; procurement; construction; and startup testing and commissioning services for Renewable Energy — Utility Scale Solar Generating Facilities (SGF). TRC ensures full



compliance with federal, state, and local de- signs and a seamless transition through all phases of a project from conception to closeout. Our services include:

- Site Selection & Evaluation
- Environmental Impact
- Engineering
- Procurement & Contract Management
- Construction
- Commissioning and Testing

The following projects highlight TRC Solutions' key capabilities:

enXco – Eastern Long Island Solar Project

TRC has assisted enXco and LIPA with environmental, zoning and building codes, as well as interconnections and due diligence for over 60 candidate development sites located throughout Suffolk county. TRC has also managed the Project's comprehensive environmental review under New York State's Environmental Quality Review Act (SEQRA) and managed the Project's initial outreach to stakeholders including elected and appointed officials and local jurisdictional agencies. When completed, the project will deliver 17 MW of power, which is enough to meet the needs of 1,800 households and reduce greenhouse gas emissions by 14,000 metric tons.

Dates of TRC Services: Start: March, 2009

End: 2011

Client Contact: enXco

Name of Point Person: Hanson Wood, Senior Solar Developer

Address: enXco, 700 LA TERRAZA BOULEVARD - SUITE 200, ESCONDIDO, CA 92025-3868

Telephone: (619) 737-6481

AxioPower Solar Farm

TRC supported AxioPower (Axio) in the design and permitting of a 2 MW (DC) passive solar installation in Greenfield, MA. In June 2010, Axio was notified that it was the successful bidder to lease the Town of Greenfield's closed 25-acre landfill as a site for a 16,500 panel photovoltaic (PV) installation. Titled the Greenfield Solar Farm, Axio had proposed an aggressive schedule to have the farm generating renewable power for the Town by February 2011. On behalf of Axio TRC was able to meet all MassDEP technical review criteria and obtain the first Landfill Post-Closure Use Permit issued by MassDEP for a PV system on an MSW facility more quickly than the project schedule assumed.

Dates of TRC Services Start: June 2010

End: 2011

Client Contact: AxioPower

Name of Point Person: Paul Curran, Senior Vice President

Address: Axio Power, 40 Garden Street, Suite 203, Poughkeepsie, NY 12601

Tel: (845) 473-0300

eSolar and NRG Energy New Mexico SunTower Project



This complex project included permitting for an approximately 450-acre 96 MW solar generation facility near Santa Teresa, New Mexico. This project was designed to assist the utilities in New Mexico achieve their targets for renewable energy, and at the same time to provide reliable power in

the rapidly growing Las Cruces, NM/El Paso, TX area. TRC's role included permitting services for the new facility. The project had an aggressive schedule as well as extensive permitting, sequencing, and regulatory challenges. The project is currently on schedule to be constructed with interconnection no later than April 2011.

Dates of Service Start: May, 2009 End: December, 2009

Client Contacts: NRG Solar and eSolar

Name of Point Person: Ray Kelly and Michael Bass

Address: 5790 Fleet Street, Suite 200; Carlsbad, CA 92008 and 3355 W. Empire Avenue, Suite 200;

Burbank, CA 91504

Telephone: 760-710-2197 and 818-303-9567

9.5. Smart Energy Capital, LLC

Smart Energy's strategic capital partners, Duke Energy and Integrys Energy, have significant experience in owning, operating and maintaining solar PV projects, which sell solar energy to commercial, government and utility customers under long-term power purchase agreements. On an aggregate basis, Smart Energy's strategic capital partners currently own and operate 23 solar PV projects throughout the United States with an aggregate capacity in excess of 28 MW, including the following representative projects:

Power Purchaser	# of Sites	Location	Туре	Aggregate Size
CPS Energy	1	TX	Ground	16 MW
Arizona State University	3	AZ	Parking/Roof	1.7 MW
Harvard University	1	MA	Roof	0.5 MW
North Carolina Municipal Power Agency No.1	1	NC	Ground	1 MW
Energy United	1	NC	Ground	1 MW
JC Penny	9	CA and NJ	Roof	3.9 MW
Toyota	1	NJ	Roof	1.5 MW
AT&T	1	NJ	Roof	0.8 MW

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